

SD Times

SOFTWARE DEVELOPMENT

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INVENTOR OF JAVACARD TURNS ATTENTION TO .NET

SchlumbergerSema looks to capitalize on growth of North American smart-card market

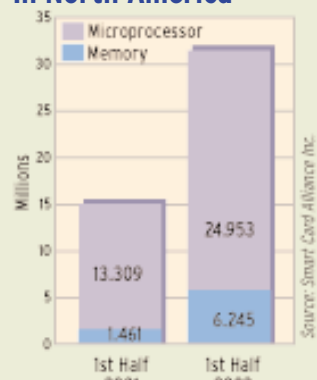
BY EDWARD J. CORREIA

SchlumbergerSema is hoping that history will repeat itself. In late December, the creator of the widely endorsed JavaCard specification said it is building .NET Card, a runtime specification and API defining how .NET applications can be written and interact with .NET services running on credit-card-sized computers.

SchlumbergerSema, a division of global services giant Schlumberger Ltd. (www.slb.com), is already a major player in the smart-card business. In 1997, the company approached

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Smart-Card Adoption In North America



A KPMG survey showed that smart-card usage has more than doubled since the first half of 2001.

Software Company Celebrates Life

Co-founder driven by father's murder to become a success

BY CHRISTINA M. PURPI

David Wheeler could simply have become a victim of circumstance. But he turned the rage that had welled up in him since the tragic death of his father into an expertise in XML that has brought him to where he is today: one of the founders and the



Celebrate's
David Wheeler

chief technology officer of Austin-based Celebrate Software.

David's father, Roger Wheeler, was a prominent and wealthy

businessman from Tulsa, Okla., who owned World Jai Alai, a Miami-based gaming company that allegedly was infiltrated by organized crime. After discovering that profits from his company were being skimmed, the elder Wheeler tried to rid the

company of its crime ties, and shortly thereafter, in May 1981, the 55-year-old was found dead in Tulsa. Police ruled his death a homicide, and to this day, the man who allegedly ordered the hit remains a fugitive on the FBI's most wanted list.

The young Wheeler, in his early 30s at the time of his father's death, was doing database consulting, and decided to fight back by using his expertise to assist the police in tracking down his father's killers. He developed a search engine that helped police investigators rummage through complex data and help find patterns and profiles within badly

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VERITAS WILL ACQUIRE PRECISE, JAREVA

BY DAVID RUBINSTEIN

Calling its shopping spree a "natural extension" of its storage software business, Veritas Software Corp. late last month announced the planned acquisitions of application performance management software provider Precise Software Solutions Inc. for US\$537 million, and server provisioning tools vendor Jareva Technologies Inc. for US\$62 million. Both are all-cash transactions, though shareholders may opt to receive

Veritas stock instead.

Gary Bloom, CEO of Veritas (www.veritas.com), said the acquisitions represent a big upside with very little downside risk. "The synergies are nothing short of spectacular," he enthused. "We can expand our market in a natural extension of our business, with high availability and optimal performance."

Precise, which Bloom said has experienced 20 consecutive quarters of growth, offers analytics "from the URL to SQL,"

while server automation solution provider Jareva "does for server hardware exactly what Veritas does for storage hardware."

Bloom said the existing Precise engineering centers, in Israel, Virginia and Massachusetts, will be maintained, so the acquisition will not be disruptive to the company's business. When the deals are closed and the integration completed, Bloom said Veritas' software product line will more fully compete with those from HP, IBM and Sun. ■

Eclipse Shifts Into Life-Cycle Development

Now 30 members strong, open-source group takes on modeling, version control

BY EDWARD J. CORREIA

Eclipse is setting its sights on collaboration and quality assurance with the launch last month of the Koi and Hyades projects, which will extend the development platform with code donated mainly by new members Instantiations Inc. and Object Management Group Inc.

Project Hyades is "an approach to the entire life cycle," said Skip McGaughey, an IBM Corp. employee who serves as chairman of the Eclipse board of stewards, referring to the UML-based code testing and verification profiles defined by OMG and donated by IBM, Rational and Scapa Technologies. "Rational is contributing a lot of the UML framework, and some of the profiling is being worked [into Eclipse] in conjunc-

tion with OMG. Scapa is donating some of the class libraries." Capabilities to become part of the Eclipse base configuration will be "load testing, automatic function testing, test management and trace analysis," said McGaughey.

The main contributor to the Koi project is Java developer Instantiations, which McGaughey said will donate code to add advanced version control to the Eclipse base configuration. "The Koi project [adds] a fine-grained



If it weren't for Microsoft, Eclipse wouldn't be happening, says Forrester's Schadler.

version control [and] configuration management, and will enable version control at a class level within an object. Most configuration management today is done at a file level," he said.

Eclipse, the open-source development tools project launched

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IAM-Developing Has Collaboration at Its Core

IDE designed with multiple users, third-party interactivity in mind

BY DAVID RUBINSTEIN

Building from its roots as Java training and consulting company IAM Consulting, Internet Access Methods Inc. has released IAM-Developing, a collaborative development environment based on peer-to-peer technology.

"We started a professional services company in 1995 to fund a software company," said president and CTO Gerry Seidman (www.iamethods.com). "We've been interested in how people work together remotely, and over the last few years, we've developed some tools."

Seidman said many tools today that call themselves collaborative are limited to identical screen views. "Either I'm at the mouse and working, or you hold the mouse and work," he said. "And [Microsoft] Excel is not collaborative. Different

people can't look at different columns at the same time."

Based on the concept of spontaneous synchronicity, IAM-Developing allows developers to work on the same source-code file together by popping a window up on more than one desktop. Color coding allows developers to see who is working on which part of the code, and shadowed scroll bars allow the

team to see where in the code someone is looking, even if it's a part of the code that's not in the window.

Each developer retains control over his desktop, Seidman said, so there is no "let me drive" problem. "Let's say I



In IAM-Developing, code can be worked on synchronously.

inherited code from Christine, who's now in another office. I can now work with her in a collaborative environment. The code appears as my document on Christine's desktop. She can instigate a compile and build in my environment."

A locking mechanism in the IAM-Developing solution can prevent more than one person from changing the code at a time, but everyone with a window to the code on his or her desktop can see the change as it's being made and can communicate thoughts or comments immediately, Seidman explained,

Other collaborative solutions are shared repositories of code stored in a central location, Seidman said, and even though more than one person can check out and check in the code, only one person can work on it at a time, and often the solutions allow only for asynchronous communication.

either over the telephone or using instant messaging.

Within the application, the window's background color changes to indicate which member of the team is working on the code at that moment. Also, a synchronized view allows everyone to see if one person is scrolling through the file; however, this can be decoupled to allow more than one person to scroll through the document at once, Seidman said.

According to Seidman, this type of tool is gaining support among proponents of Extreme Programming, which advocates team development but up to now has been limited by the lack of multiple controls into the source file.

IAM-Developing can be used with both Java and Unix. "You can pop up X-Term [termi-

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IBM and the Global Commerce Backbone

Software giant's vision focuses on WebSphere as glue for infrastructure

BY ALAN ZEICHICK

Danny Sabbah has a vision. Well, it's sort of his vision, and sort of IBM's vision, but let's call it his vision: a global commerce backbone.

Sabbah, vice president for IBM Corp.'s application and integration middleware division, is in charge of key product lines such as WebSphere—an ever-expanding family of products encompassing a J2EE application server, portal server, development tools and projects such as the Eclipse tools framework. While he doesn't control all of IBM's software—that role belongs to his boss, Steve Mills—Sabbah is closely focused on the parts that offer support for e-business.

"Look at where we come from, what we do well at IBM," said Sabbah. "Marry that to where the market is going, and where they think that we can uniquely provide them with solutions. What we look at most aggressively is this notion of a global commerce backbone."

Tying that in with IBM CEO

Sam Palmisano's much-touted initiative, called e-Business on Demand, Sabbah said, "You want that global commerce backbone to behave like a utility, where you pay for return on investment, not for trucking in a whole bunch of hardware, software and services."

What's that have to do with his software business? Everything. "We're trying to get to an infrastructure for managing and building transactions and persistence, and security and everything else, into that global commerce backbone," explained Sab-

bah. "We're not trying to do a Russian Five-Year Plan—that is, wait for five years, and it'll be done. We're trying to do it in an incremental way that moves the technology as well as the business model. That's more aligned with what our customers are trying to do."

Translating that into a direction, Sabbah said, "we're focusing on time-to-value, not time-to-prototype.... Think about the race that's been going on around J2EE standards and

Web services. Doing an implementation of J2EE standards that doesn't take into account qualities of service isn't providing real return on investment."

GETTING A BACKBONE

Enterprises log onto that global commerce backbone vision via IBM's utility model of e-Business on Demand. "There are new standards, and there's a business opportunity," said Sabbah. "For many businesses to take advantage of that kind of

commerce infrastructure, that's going to require that scalable solutions be made readily available to them through utilities—as packaged solutions that can be paid for on an as-used basis."

Sabbah & Co. will bring customers to that backbone through WebSphere. "The evolution of the WebSphere family goes way beyond the notion of a simple application server. It incorporates business integration. It incorporates a way of building and deploying applica-

tions using progressive qualities of services, as we announced with [version] 5.0," he said.

"You'll see an integration of the principles around Web services implemented on top of WebSphere, manifested into the evolution of eServers around grids. You will see industry-based services and solutions that are targeted and repeatable patterns on those types of underlying hardware and software infrastructures,"

► continued on page 8



IBM is focusing on time-to-value, says Sabbah.

WEBSHERE.NET?

Although IBM Corp. is a major Microsoft ISV, WebSphere's heart belongs to Java. "The notion of interoperability between an IBM-based J2EE infrastructure and a Microsoft-based application written in .NET is definitely something that we're targeting; that's why we established WS-I [Web Services Interoperability Organization]," claimed Danny Sabbah, vice president for IBM's application and integration middleware division, stating quite firmly that WebSphere will remain on Java, rather than adopt the Microsoft Common Language Runtime (CLR) and C# language.

A big problem with the Microsoft platform, according to Sabbah, is that there is no .NET construct equivalent to an EJB. "From a technical standpoint, there's nothing that we would think of as a server-based component. You could map [J2EE] concepts into what Microsoft thinks of as an evolutionary client/server architecture that uses CLR as a leveling execution model," he explained. "But basically, for us to do that would require a four-to-five-year effort, similar to what we went through with the component model and systems model around J2EE, for CLR and for C#. Frankly, we don't see any value in it."

After all, he laughed, "even if you were to put the CLR and the .NET Framework onto a Linux platform, it still doesn't give you WebSphere. [.NET] doesn't give you common services like persistence and transactions. They have a framework for it, but they have to have a common implementation, not just a framework."

—Alan Zeichick

OptiBench Drives for Usability

Performant's revised diagnostic tools instrument and monitor distributed J2EE applications

BY ALAN ZEICHICK

Performant Inc. has updated its diagnostic software, OptiBench, to focus on improved usability by developers. The new release, which appeared in mid-December, also gives developers more fine-grained control over how their applications are instrumented in order to reduce the impact of the monitoring itself.

OptiBench instruments and monitors J2EE applications both during development and after deployment. It focuses on capturing all transactions within the applications so that they can be diagnosed and recreated, as needed, to solve performance problems.

With version 2.0, according to Tim O'Brien, vice president of marketing at Performant (www.performant.com), "developers have greater control over instrumentation. We allow the user to instrument what they want, where they want. That

really helps manage system overhead" of applications.

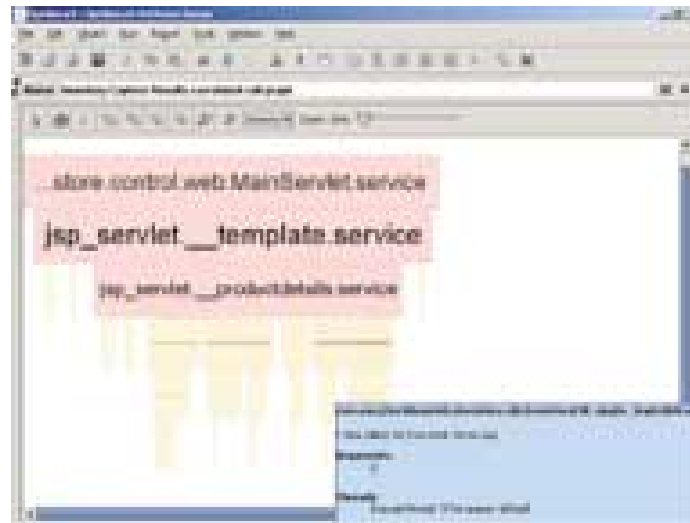
Previously, he said, "OptiBench had some limits in regard to usability; you really had to know the codebase, at a very deep level, to choose what you were going to instrument within the app server. We've made it a lot easier; now there are user-friendly panels that walk you through that."

O'Brien said that version 2.0 also adds new visual correlation to help developers spot problems faster. "For example, it will show you visual call chains that can help you identify very quickly where most of the [processing] time is being spent during the sequence of a transaction. This gives the problem-solver something they can key in on visually, very quickly, without having to go through the log files."

This functionality is analogous to the call graphs produced by ordinary code profilers, he

claimed, adding that the monitoring can be extended through the complete distributed application stack, from HTTP to J2EE to underlying databases, and drilling down to an individual method. "For a given method, we can tell you that it was invoked 300 times; you can right-click on that method, and it will give you a list of all 300 instances, and you can look at each one individually."

The benefit, he said, is that OptiBench's diagnostics go deeper than the summary information provided by other monitoring tools. "Application monitoring solutions, like Wily Introscope or Precise I3, use summary-level aggregation or transaction sampling to keep overhead low. If you look at only one out of every thousand transactions, it will keep your overhead very low. But when a problem happens, you have only a 1-in-1,000 chance of identifying



OptiBench 2.0 provides a visual correlated call graph of instrumented apps.

the problematic call. What we do is give you the instance list of all thousand calls."

O'Brien said that OptiBench is actually designed to complement those monitoring tools, not replace them. "Product monitoring tools are great for alerting operating staff that a problem has happened. But when you need to solve that problem, there's a level of detail that we don't know that any of those products can provide."

A typical scenario, said O'Brien, is where you might have a complex transaction that

requires 15 different calls in the middle tier, perhaps some to external systems beyond the instrumented application. "If you are sampling one transition per minute, to monitor your production applications, you'll never get to isolate and expose all 15 calls [with a monitoring tool]. You'll be lucky to catch one of them." By contrast, he claimed, OptiBench will trap and log them all.

OptiBench 2.0 is now shipping, and a typical installation costs between US\$50,000 and US\$80,000, according to O'Brien. ■

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NetBeans Still Key To Sun Tools Strategy

BY ALAN ZEICHICK

NetBeans—the open-source tools framework created by Sun Microsystems Inc.—is alive and well, albeit quiet. Despite recent activity around Eclipse, its rival from IBM Corp., Sun insists that NetBeans is on track and will remain central to its Sun ONE platform.

Jeff Anders, Sun's group marketing manager for NetBeans, acknowledged there's been little news out of the NetBeans organization since its incorporation of MOF—Object Management Group Inc.'s Meta-Object Facility, a key part of its Model Driven Architecture initiative—into the tools framework. That was in May 2002. "We were the first to do an implementation of MOF," Anders said, adding that the focus now is bringing NetBeans into alignment with Sun's J2SE and J2EE implementations that

include its JVM and Sun ONE application server.

Anders said developers have been confused about whether to develop applications using the NetBeans framework or the Sun ONE tools. The result: "We've put in a very clean delineation between the two. NetBeans is the offering for Java developers who want to stay in line with early adopters of new platforms and new APIs." By contrast, he explained, Sun ONE Studio is for Sun's commercial customers who want a fully supported IDE.

Anders did say that NetBeans was lagging behind the Java Community Process's Java specifications; the current version, 3.4, "still supports J2SE 1.3, though there is some 1.4 support for J2SE, and also for J2EE 1.3. It's not full; it's to the level of JSPs and servlets, but not full EJB for deployment."

ECLIPSE

◀ continued from page 1

by IBM nearly a year ago, now boasts 3.1 million downloads, according to organizers, and has grown from its nine founding members to about 30, the most recent of which include Oracle, Parasoft and SAP.

IBM's McGaughey said that the rapid success of the project came as a surprise. "The growth is far exceeding anything we had ever thought about." He said this is because Eclipse fills a basic need. "Eclipse represents what developers have always wanted to build but have never been able to because of market pressures. And the technology has been well received on the business side because it's free, open-source and [includes] worldwide distribution rights. We're seeing open-source people from the Linux community embrace it, and we're seeing major companies look at it and say, 'I can reduce my expenses, [and] put my best programmers in areas where they are producing real value rather than reproducing things over and over.'"

One such company is SAP AG, a new Eclipse member that plans to retool its entire IDE line around Eclipse, which McGaughey claimed gives

Eclipse a measure of validation.

Ted Schadler, a software analyst at research firm Forrester Group, sees Eclipse's growing member list and momentum as a mounting challenge to Microsoft. "It's probably the last best hope of the 'We hate Microsoft club' to leverage each other, rather than each going after a redundant tool workbench." The big opportunity, he added, is to bring Java tool developers together around a single platform, similar to the way J2EE unites them around middleware. "Java tools vendors understand that the big danger is Microsoft, not each other. So if they come together on the foundation, then they don't have to reinvent the wheel on low-level [features] like code sharing, the IDE, the repository, testing and all the things that are critical but mundane.

Because if the world is going to [continue to] work together on middleware and remain in competition on the tools," Schadler continued, "then Microsoft is going to win, because they've got a better tool with more developers and more money."

If Microsoft didn't exist, neither would Eclipse, he asserted, because without a giant, there would be no need to join forces to compete against it. ■

The project's goal, however, is to speed adoption of new specs. "We'd like to have the version of NetBeans ready to go when the spec is released. But realistically, it should be 30 to 60 days."

By contrast, Sun ONE Studio is intended to track the release of Sun's commercial platforms, said Anders. "In this case, when we release Sun ONE App Server 8, which is the product that will implement J2EE 1.4, then Studio should be available to go with it."

In terms of industry support for NetBeans, Anders admitted that Sun hasn't been active in recruiting new vendors. But, he said, there may be some new NetBeans partner initiatives being announced in early in 2003, focusing on the forthcoming J2EE 1.4 spec.

ECLIPSING NETBEANS?

Overall, said Anders, Sun is satisfied with NetBeans, as it has provided "a good Java IDE to get more developers on Java itself. We've done that—and as strange as it sounds, a testament is that a year after we launched NetBeans, IBM launched Eclipse. Having IBM do Eclipse is a very strong endorsement of what we're doing with NetBeans."

That's not to say that Sun approves of Eclipse. "The sad part is that there are prescribed ways for improving Java, and that's called the JCP," sighed Anders. "[IBM] has chosen to do some things that are hurting the Java community."

Specifically, Anders cited the long-running feud over IBM's use of the Abstract Windowing Toolkit for the IDE and for GUI components, instead of the JCP's recommended Swing graphics libraries.

Despite the industry momentum toward Eclipse, Anders doesn't see Sun joining IBM's project. "We've looked at Eclipse from a technical standpoint, and we believe that NetBeans is the right platform for us to go forward on. Our plans are to continue to build [Sun ONE] Studio on top of NetBeans, plus there are a number of other projects here at Sun that use NetBeans, and products delivered on top of that framework. We still think it's the right answer." ■

News Briefs

COMPANIES

Hewlett-Packard Co. is now bundling a trial version of **BEA Systems Inc.**'s WebLogic Server 7.0 app server with its HP-UX 11i operating system. HP-UX 11i runs on both HP's PA-RISC processors and Intel's Itanium 2 chips . . . **ILOG Inc.** has created a connector between its JViews business rules management component suite and **Versata Inc.**'s Logic Server process engine.

PRODUCTS

SlickEdit Inc. will be releasing a version of its code editor that plugs into IBM's WebSphere Studio. The new version of **Visual SlickEdit** also can plug into IBM's Eclipse open tools framework. The plug-in can be selected as the default editor within the IDE. The initial version of the plug-in will be for Windows, and will be followed by Linux, AIX and Solaris . . . **Crystal Decisions**, which sells enterprise database reporting and analysis tools, has released versions of its software targeting smaller and medium-sized businesses.



The packaged offerings will include its **Crystal Reports** tool and tech support, and will sell for between US\$2,000 and \$22,000 . . . **JGsoft** has released **PowerGREP**, a visual tool for Windows based on the popular grep text-manipulation utility for Linux and Unix. PowerGREP, priced at US\$99 per user, can perform complex search-and-replace and file-manipulation operations on text and binary files . . . **MKS Inc.** has enabled its **Source Integrity Enterprise Edition (SIEE)** software configuration management product to be integrated with Mercury Interactive Corp.'s **TestDirector**, a test management server. If both products are installed, SIEE can organize and manage test scripts, and users can access SIEE's version-control functions directly from within TestDirector . . . **ActiveState Corp.** has updated its Perl tools to accommodate the latest language specifications. The **ActivePerl 5.8** interpreter now works with Unicode and files larger than 2GB, and includes the PPM3 executable as its default. **Visual Perl**, the IDE, now works with ActivePerl 5.8. And **Perl Dev Kit** now can run applications from the Windows system tray, and supports HP-UX, Linux and Solaris in addition to Windows. The company also released **PerlASPX**, which allows Perl to run as a Windows ASP.NET scripting language . . . **Microsoft Corp.** has updated its **MapPoint .NET** geographic Web service. Version 3.0 provides street-level coverage for more of Europe, additional points of interest, and the ability to specify points based on latitude and longitude . . . **CodeWeavers Inc.** has shipped **CrossOver Office Server Edition**, which lets users run Windows software using a distributed thin client on Linux and Solaris clients. The software is intended as a competitor to Citrix's WinFrame and Microsoft Terminal Services, and is priced at US\$1,195 per server and \$1,185 for 25 user licenses . . . **Zend Technologies Ltd.** has extended its PHP development tools to support IBM's AIX and AS/400, and HP-UX. Previously **Zend** ran only on Windows.



PEOPLE

The Charles Babbage Foundation, a nonprofit organization founded in 1977 to preserve the history of information technology, has named **Luanne Johnson** as its first full-time president. Johnson formerly was co-founder of the Software History Center . . . **Flashline Inc.**, which sells software component reuse tools, has hired **Jay Holmstrom** for a new position, VP of consulting solutions. Holmstrom formerly was a director of product management at Compuware Corp. . . . **TIBCO Software Inc.** has hired **Bradley Rode** as EVP for products and technology. Rode had served as president and CEO of iPIN, an electronic payment provider . . . **Raining Data Corp.** has promoted **Boris Geller** to VP of market development. Geller, who joined the company in early 2002 from SteelEye Technologies, will focus on the company's XML product line . . . **Microsoft Corp.** has promoted **Roz Ho** to general manager of its Macintosh business unit. Most recently, Ho was a product unit manager for Microsoft's Macintosh team in Silicon Valley; before that, she worked on PowerPoint and OfficeArt . . . **Sunny Gupta** has joined **Performant Inc.**, which sells diagnostic tools, as VP of marketing and business development. Gupta formerly served as senior director of business development for Rational Software Corp. ■

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J2EE 1.4 Brings Web Services To EJBs, Adds Language to JSP

BY ALAN ZEICHICK

Last month, Sun Microsystems Inc.'s Java Community Process published its second proposed final draft of J2EE 1.4, adding key Web services specs to the platform.

While Sun officially refused to estimate when the specification might be formally ratified by the JCP, expectations are that J2EE 1.4 will be approved in March or April of this year. Work on J2EE 1.4 was begun in October 2001.

"This really builds on a platform that was already driven by Web standards," said Mark Hapner, a Sun distinguished engineer who serves as the JCP spec lead for J2EE. "The JVM infrastructure, the container infrastructure, the protocol support, is all there already with J2EE 1.3 for delivering Web applications. Web services extend that protocol set to include another class of applications, and that's how it's approached in J2EE 1.4."

Web services for both Web components and EJB components are defined by a single technology, JAX-RPC, which describes the API needed to implement a Web services end point and to access that Web service as a client, Hapner explained. JAX-RPC includes both development-time tools and runtime code, Hapner said, "with WSDL and Java, and supports the developer in two modes. They can start with Java and automatically derive a Web services view of the end point. Or they can start with WSDL and use JAX-RPC to provide an easy-to-use way to interact with that existing Web service." WSDL is the Web Services Description Language, which defines the functionality of a specific Web service.

Hapner stressed that the Web services functions in J2EE 1.4 go beyond the Java Web Services Pack that Sun introduced as a Sun ONE-centric add-on for J2EE 1.3 during 2002. "The Pack only provides direct support for Web components. What we've done with 1.4 is integrate that facility directly with EJBs." A developer simply creates an Enterprise Java-

Bean, he said, and if it uses Web services, assigns a JAX-RPC signature to that EJB. The J2EE container automatically generates all the infrastructure for that Web service to work.

"It's now a very short path to creating a Web service with an EJB," Hapner claimed. "You don't have to put a servlet in front of it, or create an extra layer of code. You just do the EJB, and it's a Web service."

There's also new plumbing in J2EE 1.4 that's derived from Java Service Request 109, called Implementing Enterprise Web Services. "That provides an architecture for how to package your Web service and deploy it," said Hapner. "If you look at the Java Web Services Pack, you can develop a Web service and deploy it on the Web Services Pack [on the Sun ONE app server], but a physical packaging mechanism hadn't been standardized yet that would let you deploy it on other app servers." That's now fixed with J2EE 1.4 with JSR-109, he said, which defines that standard package and a means for installing it. "That fulfills the portability requirements of the J2EE platform."

KEEPING IT SIMPLE

Beyond Web services, Hapner said, J2EE has improvements to JavaServer Pages. The most important, he said, was Simple Expression Language, which he described as a way of writing programmatic expressions in a simple syntax. This allows JSP to be used like a scripting language, such as JavaScript. "We're expanding JSP beyond its role of simply formatting the output of a Web page, dynamically, to allow you to write logic at the JSP level," he said. "So, the JSP developer won't be forced to push down to Java to do programming."

The Simple Expression Language is targeted at nonprogrammers, such as Web developers, Hapner added. "Essentially, the expressions facilities in

► continued on page 10

KEY JSRs FOR J2EE 1.4

WEB SERVICES

- JSR-67 Java APIs for XML Messaging (JAXM)
- JSR-93 Java APIs for XML Registries (JAXR)
- JSR-101 Java APIs for XML-based Remote Procedure Calls (JAX-RPC)
- JSR-109 Implementing Enterprise Web Services

OTHER FEATURES

- JSR-56 Java Network Launching Protocol and API
- JSR-77 J2EE Management
- JSR-88 J2EE Application Deployment
- JSR-112 J2EE Connector Architecture 2.0
- JSR-115 Java Authorization Service Provider Contract for Containers
- JSR-152 JavaServer Pages 1.3
- JSR-153 Enterprise JavaBeans 2.1
- JSR-154 Servlet 2.4

VSLive to Focus On .NET Framework

BY DAVID RUBINSTEIN

Microsoft Corp.'s .NET platform will be the centerpiece of Fawcette Technical Publications' VSLive conference, to be held Feb. 9-14 at the Hilton San Francisco hotel. The first full day of the conference will be dedicated to such topics as Web application deployment, component development and data access in Visual Studio .NET.



CONFERENCE: Feb. 9-14
Hilton San Francisco

PRECONFERENCE WORKSHOPS:
Sunday and Monday

.NET FOCUS DAY:
Tuesday, 9 a.m.-5:15 p.m.

CONFERENCE HOURS:
Wednesday, 9 a.m.-5:45 p.m.
Thursday, 9 a.m.-5:45 p.m.

EXHIBIT HOURS:
Tuesday, Noon-6 p.m.
Wednesday, 12:30 p.m.-3 p.m.; 6:30 p.m.-8 p.m.
Thursday, 12:30 p.m.-3 p.m.

KEYNOTE:
Tuesday, 9 a.m., "Visual Studio .NET: Built for Today, Ready for Tomorrow," Eric Rudder, senior vice president of developer and platform evangelism, Microsoft Corp.

www.vslive.com/2003/sf

Among the topics to be examined on .NET Focus Day, Feb. 11, are building and consuming XML Web services, and deploying applications using .NET Framework in the installers written into the applications. Also, Microsoft will preview Visual Studio .NET 2003.

There will be a new preconference workshop for commercial software developers targeting the .NET Framework that will look at such issues as protecting intellectual property, application updates, product naming and packaging. Registered attendees, who can participate in this workshop for free, will receive a complimentary copy of the .NET Toolkit.

The event again will serve as an umbrella for smaller conferences on Visual Basic, ASP, C# and SQL, with daily instructional tracks and discussions set for each of those areas. VBITS sessions include object-oriented programming for Visual Basic, migrating from ADO to ADO.NET, and updating VB 6 applications to VB.NET.

The show's C# classes include advanced custom controls for Windows Forms and Web Forms, and .NET remoting in C#, while the SQL classes include address performance and security, and the ASP sessions tackle such issues as template and code reuse, an in-depth look at the ASP.NET DataGrid control and dynamic graphics and charting. ■

JAVA SHOW ADDS TRAINING SESSION

BY CHRISTINA M. PURPI

The third annual Wall Street on Java Technology Show and Conference will feature a new preconference training session titled "A Practical Guide to Web Services and Java Technology."

Hosted by Bowlight Consulting CEO Anne Thomas Manes, the goal of the session is to provide answers to lingering questions programmers and IT professionals still have regarding the use of Java technology in financial markets, according to Russell Flagg of Flagg Management Inc., the producer of Java on Wall Street.

Scheduled to take place Feb. 4-5 in New York just one mile from the hustle and bustle of Wall Street at the Metropolitan Pavilion, the conference is expected to mirror both the attendance, approximately 1,200 people, and the number of exhibitors, about 40, of last year's show.

This year's workshops will focus on topics such as "Java at the Trader's Desktop," "Building Intelligent Financial Services with Java Technology" and "Building Next-Generation Market Infrastructure." ■

WALL STREET ON JAVA TECHNOLOGY

CONFERENCE: Feb. 4-5
Metropolitan Pavilion, New York

CONFERENCE HOURS:
Tuesday, 8:30 a.m.-7 p.m.
Wednesday, 8:15 a.m.-4 p.m.

EXHIBIT HOURS:
Tuesday, 4 p.m.-7 p.m.
Wednesday, 9:45 a.m.-4 p.m.

KEYNOTES:
Wednesday, 8:30 a.m.-9:15 a.m., "Hooking Fixed Income Up to the Grid—Decentralizing Support for Investment Decisions," Ronald V. "Van" Simmons, director of fixed income technology, Invesco Institutional

10:30 a.m.-11:15 a.m., "From Doodads to Databases: Transactions and Web Services," Hal Stern, vice president, distinguished engineer & chief architect, professional services, Sun Microsystems Inc.

Noon-12:45 p.m., "Megatrends—How Technology Transforms Finance," Till Guldemann, vice chairman, SunGard Data Systems Inc.

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Behind IBM's 'On Demand' Curtain

BY ALAN ZEICHICK

IBM Corp. loves its trademarks. The description of its trademarked "e-business On Demand" initiative is another trademarked phrase: "The Next Utility." The company is hammering home this analogy, saying that using computational resources and powering up business software should be as easy as flicking a light switch.

What does IBM mean by On Demand? Under the covers, this initiative, being trumpeted by president, CEO and chairman-elect Sam Palmisano as a "\$10 billion bet," simply wraps a new name around a group of separate IBM software and hardware products, with the goal of making back-end systems

more flexible, interoperable and reliable.

In the On Demand game, the key rule is flexibility. IBM's solution is to pair its WebSphere Java 2 Enterprise Edition application server with its DB2 relational database. IBM is touting its Linux-based mainframes, x86-based eServer xSeries and even its iSeries (AS/400) servers as the ideal platforms for running WebSphere, and its TotalStorage storage systems for hosting DB2 as well as persistence data from running applications.

This WebSphere/DB2 infrastructure can be leveraged by selectively deploying mission-critical corporate applications on the WebSphere app servers; each J2EE application runs in its own

"container" within the app server. These applications can be deployed, started, stopped and moved around, almost in real time, to accommodate shifting demand for those apps, typically to improve response time.

That leads into interoperability. Many of the new, emerging e-business applications need to break down barriers between silos, talking not only to other *n*-tiered systems, but also to separate systems such as IBM's CICS, SAP's R/3 and Oracle. For that, IBM offers a one-two punch. For older systems, the solution is its WebSphere MQ messaging middleware, formerly known as MQ Series. For newer applications, and integration with Java and .NET systems,

IBM is urging Web services. The final pieces of the On Demand puzzle are designed to improve system reliability. IBM has built into its servers and storage systems what it calls "autonomic" technology. Databases, servers and mainframes all contain features to predict and identify faults, repair problems and even optimize performance based on current usage patterns. The newly released DB2 8.1, for example, contains a so-called "Self Managing and Smart Turning" feature that IBM says will simplify database administration, and can even dynamically restructure the database if queries are running too slowly. The TotalStorage system also has self-healing capabilities.

Tying the whole On Demand stack together: Tivoli, IBM's systems management suite, which monitors systems and applications, and simplifies deployments. ■

GLOBAL COMMERCE

◀ continued from page 3

Sabbah continued. eServer is IBM's hardware brand for all server platforms.

IBM's challenge, said Sabbah, is twofold: writing the next-generation software, but also finding the right way to package it. "First, we're making sure that the WebSphere family comes together on a single view of how an application developer builds an application, manages that

application, and brings forward his skills in a consistent way," he said. "We call that the 'common programming model.'"

But, he insisted, "we're doing this incrementally, and will deliver value in small steps. We're trying to create ecosystems that actually are based on market-making requirements."

IBM's WebSphere vision is clearly broader than Java, and actually has XML at its root. "The notion of Web services being XML-based, being a lower-com-

mon denominator than pure J2EE, is an evolution. J2EE, if you think about it, is an implementation technology, not a declaration technology," Sabbah claimed. "We needed to take a right-hand turn to get the kind of openness necessary to build a critical mass around global commerce backbones."

Expect to see IBM continue its aggressive push into mobile computing. "You'll also see the evolution of edge-device based models. We believe that with the advent of ubiquitous devices, you'll need a different view of how you manage those devices and manage the

deployment of applications on those devices," Sabbah continued.

"Those devices will be very different than standard PCs, both from a functionality and manageability standpoint. The notion of having personally managed local state that's kept in a network is not something that maps nicely into a pure client/server model. So you have to start filling out the user interaction side of the server-side programming model. We're going to push forward on mapping the user experience into this type of network model; we're not going to cede that to anybody," he insisted. ■

WHOSE OPEN STANDARD?

Danny Sabbah, vice president for IBM Corp.'s application and integration middleware division, repeatedly referred to the need to leverage "open standards" on IBM's march to a global commerce backbone. But Sabbah's definition may not quite be industry-standard.

"What I mean by 'open' is that you want to move markets in this arena. You want to create ecosystems using a phasing approach, because you're not going to be able to, overnight, establish all of the necessary infrastructure to get critical mass behind the global commerce backbone," said Sabbah.

That translates into competitive advantage. "This is a business issue, not a technical issue," Sabbah said. "In order to attract that critical mass, and move money in these markets, you have to reduce the [customer's] anxiety level. The only way to do that is by providing openness in the standards that you establish. Nobody believes that any single player will dictate the overall playing field."

But isn't IBM trying to achieve exactly that style of dominance with its recent flurry of new proprietary protocols introduced into WebSphere 5.0? "We're trying to introduce innovation," explained Sabbah. "As you know, the reality of the marketplace is that it

always values innovation."

It's possible that IBM—like others in the software industry—is defining "innovation" as a code word for "proprietary advantage."

"So, we play an interesting game," Sabbah continued. "We innovate, but when that innovation becomes important enough to that goal of establishing a global commerce backbone, we then decide which pieces need to be open, in the sense that we invested in Eclipse, in order to lessen the anxiety that someone is being driven in a proprietary direction. It allows us to balance between innovation and keeping things open."

Sabbah cited workflow specifications as an example of innovation leading to future open standards. "[Consider] what we did with workflow standards, WSFL [Web Services Flow Language], which we then opened up into BPEL [Business Process Execution Language]. We felt that it was more important for that to be an open standard than for IBM to carry forward any proprietary value in workflow, since that's going to be crucial to openly flowing business processes across any kind of global commerce backbone."

And more innovations are on the way, said Sabbah.

—Alan Zeichick



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Debug Multiple Services Remotely	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Use Multiple Languages and Scripts for Service Development	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Scale Smoothly with a Super-Peer Architecture	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Optimize business processes by exploiting data-parallelism	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Support Component Reusability and Team Development	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Benefit from a Low Total Cost of Ownership	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

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IAM-DEVELOPING

◀ continued from page 3

nal emulator], edit in Emacs and then share the code," Seidman boasted. The Java environment supports Sun's JXTA specification for peer-to-peer communication. "We embrace it because it does some of what we did as a

proprietary technology," Seidman said. "It's easier to base it on a standard when you're telling a customer you have a solution that will cross the firewall. They know Sun knows networking." All changes are authenticated and encrypted, he added, ensuring a high degree of security.

IAM-Developing also includes something called Expert Service Provider (ESP), a menu within the development framework that can list terms of professional services contracts, for instance, or can integrate with service divisions of third-party companies. "Say I'm trying to integrate an application with an

Oracle database, and I have a question or a problem," Seidman explained. "If Oracle used the ESP service, a question from the developer can route to an Oracle engineer, and the engineer can see the code from a pop-up window and the engineer can write code to the developer's environment." ESP also allows bill track-

ing, so the developer knows what he's being charged for specific hours of service.

Internet Access Methods plans to deliver wizards for creating Web services, and for utilizing the full J2EE specification, later in the first quarter. A single copy of the IDE sells for US\$500 at www.iam-there.com. ■

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J2EE 1.4

◀ continued from page 6

JavaScript have been customized to work in the JSP context. People who are familiar with JavaScript will look at this language and find it familiar. But it also has a lot of nice defaults, so the right things automatically happen."

Another new JSP feature is called Fragments, which Hapner said makes JSP code reusable. "If there's a set of logic that the programmer wants to repetitively use at the JSP level, they can set up a simple parametric representation of that logic. Effectively, it's a simple component they can create. Then they just reuse that [component] in their JSP scripts."

Hapner described a number of other enhancements to EJBs, but highlighted its new "timer" facility. "Before, when you wrote EJBs, you had to write them so they were driven by clients. [EJBs] didn't wake up on their own and do anything; they only woke up to handle requests from clients. With timers, the EJB model is extended to allow EJBs to register a timer with the container, and then wake up periodically according to that timer, to see what's going on. That's not the same as putting a process manager into the EJB, but it does provide a basic facility for adding a dimension to EJB that didn't exist before."

Also, he added, J2EE Connector Architecture is now bi-directional with J2EE 1.4. "Now you can integrate a wider range of eventing services, and those services can invoke message-driven beans. It's an exciting new extension that lets you integrate in events that might be coming from external systems, such as ERP or customer management systems; you can put the business logic to manage [those systems] directly into an EJB."

More details on J2EE 1.4, also known as JSR-151, can be found at <http://jcp.org/jsr/detail/151.jsp>. ■

CELEBRATE

◀ continued from page 1

organized police databases.

In 1991, he founded a company based on the technology he developed. Wheeler sold the family car and put everything he had into the effort, coming to the brink of bankruptcy before receiving some venture capital in 1996. During this time, he came across the work of Paul Leury of the Royal Canadian Mounted Police, who had written software that finds and traces patterns to help track serial killers and rapists.

A FATEFUL MEETING

Wheeler and Leury first crossed paths at a police conference and realized that they could help each other. Wheeler sought Leury's aid in commercializing his search product and taking it into industries outside law enforcement, such as insurance, where fraud is a major problem, and that is how Infoglide Software Corp. came to be. Incorporated in 1996, the company expects to be profitable this year. However, it will do so without Wheeler and Leury, who left the company in 2001.

Wheeler, Leury and Matt Clay, Infoglide's chief architect, met to plan their next course of action. They decided that since together they had a tremendous amount of experience with XML, they would come up with a new way to do work with XML data and computations, and founded Celebrate (www.celebratesoftware.com), with all five full-time employees hailing from Infoglide. Celebrate's first product, Celebrate XML Designer and Server, is designed to help nonprogrammers use a spreadsheet-style interface to develop and process XML documents.

"We noticed that there was no good way of doing simple types of computations, logical tasks and report-style programming within XML," said Leury, vice president at Celebrate, explaining that the designer portion of the product is an XML editor that allows developers to embed Microsoft Excel-style formulas for the business logic and rules within existing XML documents. Those formulas are then processed and expanded during runtime in the server portion of the software.

"The Server is like an XML server page engine, very similar

to JSPs [JavaServer Pages] and ASPs [Active Server Pages]," said Clay, now Celebrate's CEO. "It builds XML formulas, interprets them and then produces new XML, similar to ColdFusion, but without having to learn its tag language. We're more focused on computation, with a small learning curve."

Designer has an XML editing interface, but works like Excel, Clay explained. "With a point and a click, references to data are produced, as there is a function wizard and a format wizard to build up formulas to express business logic."

The benefit to developers, explained Leury, "is that the cus-

tomization and the tweaking is factored out. Business groups can do the tweaking. Developers would build servlets that communicate with the Web pages."

The software suite runs on Linux and Windows. Celebrate Designer is priced at US\$295 per developer seat and includes a development version of Cele-

brate Server. Deployment price for the server software is US\$895 per processor.

"David [Wheeler] is driven," explained Leury. "He wants to take the company to the next level as it's his mission. Victory for him would be for the company to succeed; it would be a huge healing factor." ■



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Sybase: AvantGo Going, Going, Gone

iAnywhere Solutions acquires mobile Web developer for US\$38M

BY EDWARD J. CORREIA

In a bid to solidify its position in the mobile enterprise development market, Sybase Inc. has agreed to acquire AvantGo Inc., which develops and markets synchronization software and services for enterprise and consumer Web applications. Sybase will pay US\$38 million in cash for AvantGo, based in Hayward, Calif., and will retain most of its 117 employees.

According to Brian Vink, vice president of marketing at Sybase, while Sybase's iAnywhere (www.iAnywhere.com) database synchronization solutions did well at catering to Java, C/C++, PowerBuilder and Visual Basic developers, when it came to the Web, it was

forced to turn to its partners. "With just the products that iAnywhere offered, we just weren't able to do that."

One such partner was AvantGo, which offered enterprise developers the ability to synchronize not just with Web content, but with underlying Web applications. "This enables information to be extended from the enterprise to some mobile device, to mobilize the corporate portals they've invested in. Enterprise customers tell us that the most powerful Web pages they want to take mobile are data-driven. Where AvantGo has a unique differentiator is its ability to take dynamic



AvantGo's 7 million users were alluring, says Sybase's Vink.

Web applications and the underlying data to mobile devices and work in offline mode." Vink said the deal will position Sybase as an immediate player in what he referred to as the emerging market for mobile middleware.

Vink admitted that in addition to AvantGo's technology, its customer base was a lure, and claimed that its 7 million registered users are transferring about 2TB of data per day. "That's a great proof point for its scalability," he said, adding that potential customers looking to mobilize a work force require experienced suppliers with proven solutions. "Because

if you're going to invest in mobile [solutions] in this economy, you've got to demonstrate that it's going to work. AvantGo is a pioneer and has proven itself."

AvantGo services are free for consumers of content, with fees collected mainly from providers, a model that Vink

said will remain for the time being. AvantGo software currently supports BlackBerry, Palm OS and Windows CE devices with synchronization from Linux, Unix and Windows servers through Mac OS or Windows workstations. The deal is projected to conclude in the first quarter of this year. ■

.NET CARD

◀ continued from page 1

Sun Microsystems Inc. with what was then JavaCard 1.0, a specification that enables Java apps to interact with card-based services.

Neville Pattinson, director of business development and

technology at SchlumbergerSema, said that its new .NET-based API will greatly simplify development and proliferation of smart cards while minimizing the learning curve. ".NET Card will allow developers familiar with .NET infrastructure to develop in any language within their environment, such as Visual Basic, C#, J#, COBOL, whatever,"



.NET Card will include a runtime for smart cards, says SchlumbergerSema's Pattinson.

And while Pattinson acknowledged that completion of the .NET Card APIs is still at least 18 months off, SchlumbergerSema's announcement

comes at a time when the North American smart-card market is growing rapidly.

According to a survey conducted by KPMG International's Risk and Advisory Services practice and published by the Smart Card Alliance, adoption of memory-only and microprocessor-based smart cards in the U.S. and Canada

has more than doubled since the first half of 2001, and cumulative shipments have shown a sixfold increase since 1999, when the organization began publishing its data. The Smart Card Alliance (www.smartcardalliance.org) is a non-profit industry consortium intended to accelerate smart-card adoption.

Randy Vanderhoof, executive director of the alliance, attributes the growth to maturing smart-card technology and developers that have learned to target specific markets. "Originally there was one type of smart card. Then they began

to evolve and improve for specific applications, such as for physical and logical access [to buildings and networks], high-security applications and for contactless uses." Further, Vanderhoof said that 13 U.S. cities, including Chicago, New York, San Francisco and Washington, D.C., are moving toward smart card-based fare systems to replace tokens or paper tickets.

Although vendors say that smart-card fraud is nearly impossible, the technology has not caught on for credit-card or electronic-purse applications, the runaway favorites in Europe and Asia, according to Vanderhoof. He said the reason can be summed up in a single word: infrastructure. "Smart cards are most popular worldwide when they are used as a disposable prepaid phone card, but most U.S. pay phones don't support any type of card media." By contrast, most U.S. payment terminals read only cards with data stored in magnetic stripes.

According to Mike Liard, a senior analyst at technology research firm Venture Development Corp., smart-card marketers in the U.S. face a challenge that is perhaps even more daunting than the infrastructure. "In the U.S. right now we're really loyal to mag stripe, and it's difficult to break the habits of U.S. consumers." ■

YEAR-END SURGE IN IBM EMBEDDED TOOLS, RUNTIMES

Increases CE support, adds device management, database encryption

BY EDWARD J. CORREIA

In a flurry of year-end product upgrades, IBM Corp. in late December enhanced its DB2 Everyplace mobile database environment with table-level encryption. It also brought its WebSphere Studio Device Developer and Micro Environment mobile application development and runtime environment to version 5.0, boosting support for Palm OS and ARM targets, and adding runtimes for Microsoft and Qualcomm platforms.

Also among the major enhancements to Device Developer and Micro Environment, according to Sunil Soares, director of IBM's Pervasive Computing division, is SyncML device management. "This is a new way to provision devices, to do configuration and inventory of applications, and to send new applications to devices. Now that you have a SyncML DM-compliant agent on the device, you don't have to provision your own software to a device; all you need is a SyncML server." In December, the SyncML Initiative, a multivendor effort to establish a standard way of exchanging data between mobile devices, became part of the Open Mobile Alliance (www.openmobilealliance.org).

Version 5 also adds ahead-of-time compiling for ARM targets and will begin to introduce MIDP 2.0 support early this year, he said.

Soares claimed the upgrades are in sync with the company's pervasive computing strategy.

"The big picture is about IBM's multimodal, multichannel On Demand strategy [for] connecting to any device, any network and any data across voice, visual or a combination of the two." The company also in December released an update to its WebSphere Voice Application Access middleware for enabling remote telephony devices to access enterprise data.

Micro Environment 5.0's target list, which includes about two dozen runtimes for ITRON, Linux, Palm OS and QNX, now adds Windows CE 3.0, Pocket PC 2002 Phone Edition and Qualcomm's BREW.

WebSphere Studio Device Developer 5.0, which sells for US\$600 per seat, now integrates with WebSphere Studio Site Developer JSP development environment, and with Microsoft ActiveSync, which Soares said eases application deployment and maintenance for targets running Windows CE-based operating systems. Micro Environment runtimes start at US\$6 for MIDP and US\$15 for Personal Profile.

DB2 Everyplace 8.1 costs US\$20,000 per server processor plus US\$49 per database seat. The software can now leverage capabilities of MobileVB, AppForge Inc.'s extension to Visual Basic for targeting Palm OS, Pocket PC and Symbian OS, and also now includes a tool to modify JavaServer Pages made with WebSphere Studio Application Developer for interactive viewing on Pocket PC-based devices, according to Soares. All are available now. ■

The Change-Management

The complications of integrating mainframe code with new applications

BY MITCH WAGNER

Integrating new applications with legacy code—the type of software found on mainframes as well as other older platforms—adds new layers of complication to the job of change management and version control.

Developers building new applications must ensure the applications continue to interoperate with those older systems, across barriers of different platforms, languages, tools and corporate cultures. Often, that means attempting to make change-management and version-control tools interoperate between modern application servers and bell-bottom-era mainframe environments.

The most common method of integrating legacy applications and new code is putting application-server middleware and Web interfaces on host applications. In fact, Meta Group Inc. recently predicted that more than 90 percent of large enterprises will use host-access products that connect to legacy applications via Web services by 2007. Indeed, enterprises have found many different solutions to this problem.

APPLICATIONS COEXIST

For the foreseeable future, new applications will coexist with legacy applications. Verizon Communications, a large telecommunications firm based in Reston, Va., is building a billing system integrating mainframe applications with app servers. The application has 65,000 software items, including CICS assets on the mainframe, and distributed applications running Java and COBOL. The application is distributed on sites spread out nationwide, with about 120 developers working on the project.

The team, according to Jim Winder, Verizon's change-control management/version-control administrator, starts with detailing requirements, then formulates a design, codes, tests, completes the code, performs system tests and moves the code into production. Developers at different stages of the cycle remain in communication with one another. "We do not do waterfall methodology; they all talk to each other," Winder said.

The company (www.verizon.com) uses MKS' Integrity Manager for

change management. Developers take change requests, also known as "issues," and Integrity Manager guides them through the phases of the change process, which increases quality control and reduces the need to go back and fix bugs later. "A project that doesn't have to be fixed is a project that causes positive things for business, and not negative ones," Winder said. "It's about giving the business what they need, and making sure that what they give the business works."

Maintaining rigorous change-management practices also helps projects come in on time. "We are in a fast-paced business, we have to meet deadlines that are very aggressive, and we need to have some controls in the process to keep the quality as high as we can get it, without making the process slow down," Winder said.

Verizon moved that 10-year-old billing and order management system to Java and Enterprise JavaBeans running on WebSphere on IBM's AIX operating system. The front end is written in COBOL running on Windows NT. The transition was accomplished

over the past two years, in phases.

In the first phase of the project, the company exposed its order-fulfillment legacy application using IBM CICS Transaction Gateway, which enables Java-based middleware to execute CICS programs—in this case, allowing the WebSphere servers to execute the mainframe code, said Nishant Gajjar, WebSphere administrator/developer for Verizon. Interfaces between the platforms are EJBs and XML.

The fact that the system used so much legacy code added complications, but also provided advantages. Because end users were familiar with the application, they could make sophisticated suggestions for improving the interface. The new application presents extremely streamlined and consolidated views of data compared with the previous version, boiling five screens of information down to two, Winder said.

Integrity Manager makes sure that changes to the application are tied with the plans for the application's future direction, Winder said. Developers can't check out any code unless they have a change package that is connected with an issue. For a developer to check out code, a manager has to create a change request issue, then the developer sets up a change package, which includes all the software items checked out to achieve

the change. Workflow is built into Integrity Manager; code must be checked in and approved before it's moved to the completion stage.

"What all this is doing is it allows the developer to do the things they need to do, but doesn't allow them to do renegade changes," Winder said. "It's always done in a controlled way."

INTEGRATION BENEFITS

At Hewitt Associates LLC (www.hewitt.com), a Lincolnshire, Ill.-headquartered global benefits consulting company, the task was to build a Web front end for a mainframe-based voice-response unit that its Total Benefits Administration (TBA) clients' employees were using to manage their benefits packages, said Bill Richards, change-management systems administrator for Hewitt.

The voice-response unit system is built on a mainframe, primarily in COBOL and Assembler, with some Smalltalk, accessing data in IBM's DB2 databases using CICS. Starting about five years ago, the company extended functionality to the Web, writing new code in Java and JavaScript. The application server is WebSphere running on Sun's Solaris operating system.

On the new applications for the TBA system, the company uses Telelogic's CMSynergy for source-code manage-

ORGANIZATION MUST GET BEHIND SUCCESSFUL CHANGE MANAGEMENT

Change management involving new code and legacy code isn't just a technology issue. The organization must adapt to be sure that systems continue interfacing with each other.

Pitney Bowes Inc., known for its postage machines and other mailroom solutions, uses new software communicating with legacy applications in its PB Ship desktop shipping product, and also with Internet postage software that allows users to print out postage for envelopes at their own desks, said Nanette Brown, director of applied architecture and quality management for the Internet and PC group of Pitney Bowes (www.pb.com).

Change management of the interface

between the PC applications and back-end host systems is still a work in progress, Brown said. "The first thing you have to do is make sure the interface to the older system is documented, since it spans organizations. You have to get a cross-organizational change control board in place."

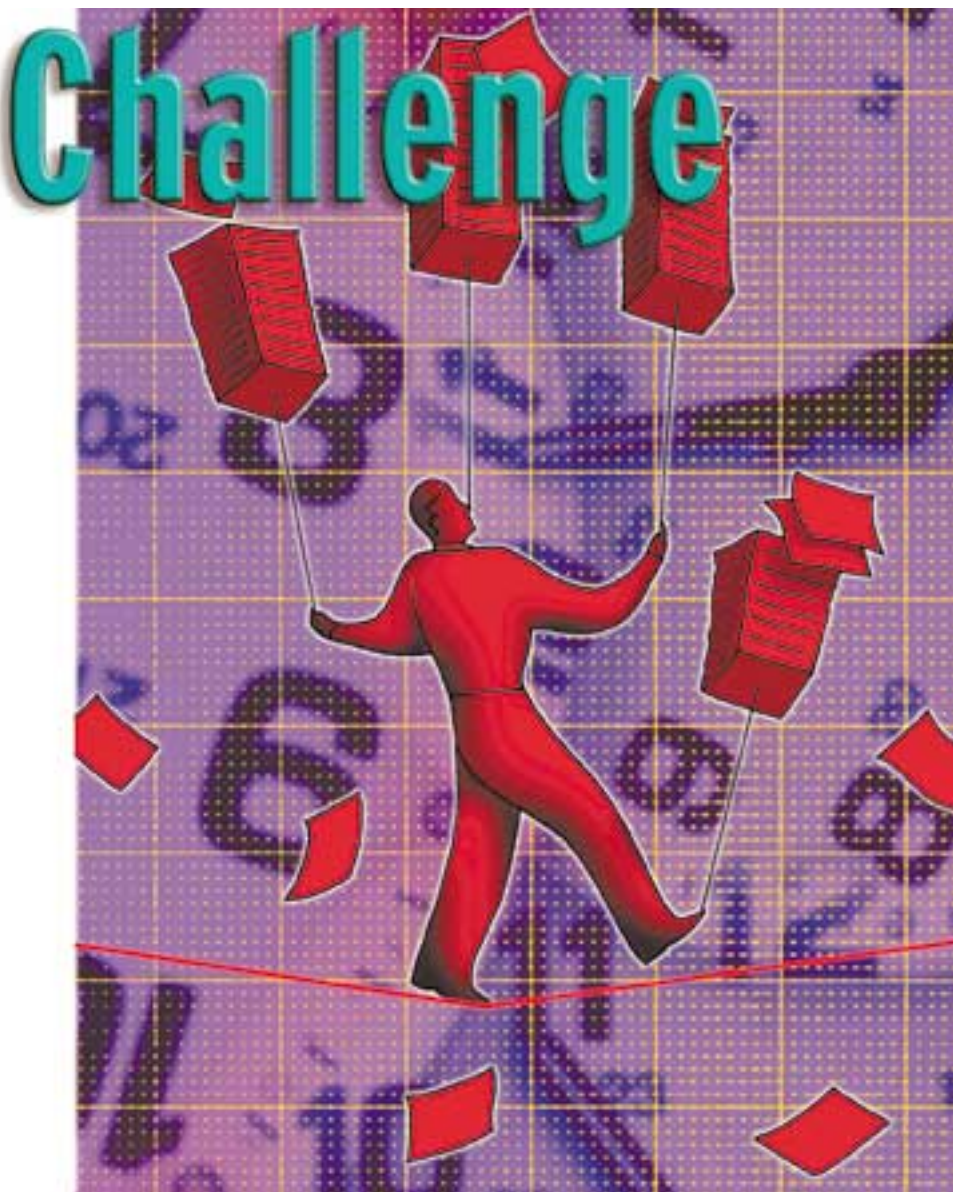
Those procedures and the board are still being put in place. Until then, the company is continuing to use informal communication channels to achieve the same things. "We're putting in place more formal processing, trying to make things more fail-safe, so you're not necessarily dependent on people remembering to tell each other things and the system automatically catches changes

instead," Brown said.

Changes at the fitness-center chain Life Time Fitness Inc. take the form of either a request from a business manager for a new system or enhancement to an existing system. The change requests are tracked in a home-grown application called Traq, which follows a project through its entire life cycle, said Gary Lien, senior systems architect.

When existing systems are having problems, and the help desk is notified, those changes get logged into a freeware application called Keystone, which Life Time Fitness modified in-house.

Changes are classified as "mini," "departmental" or "enterprise." Small changes, or minis, are handled internally



ment, version-control and configuration management, and also uses Interwoven for content management. On the mainframe, the company uses Computer Associates' AllFusion Endeavor to manage source code. The two sides are incompatible.

Endeavor is a file-based tool; when developers want to make changes to mainframe code, they simply log in to Endeavor and check out the code, and check it back in again when done.

The CMSynergy management sys-

tem is task-based. Individual projects are shared, consisting of an entire Web site for an individual client, and containing roughly 1,500 software items within the site. The developer creates a task to make a change, checks out the elements needed to be changed, tests code changes, and then checks the tasks back in when complete. Individual files are managed by an Informix server running on Unix. This change-management process is confined to the Unix environment because of incom-

patibilities with the mainframe system version control.

Once the developer is satisfied, changes go to build managers, three developers working with code generated by 650 other developers and producing 100 builds each day. Multiple changes at a time are made to client sites once or twice per day, including bug fixes and new features.

GRADUAL REPLACEMENT

General Motors Corp. (www.gm.com) is gradually replacing a host-based manufacturing application with a more modern J2EE-based infrastructure. "The whole effort of this production pilot is to do a proven and repeatable way to do this migration," said Fred Falten, director of application architecture and integration, application solutions delivery, for GM.

Key to the plan is dividing the existing legacy application into modules that can be brought over to the new environment in pieces. That planning is expected to require six to eight months, and the remaining timetable will be set once planning for the application is done.

Existing environments are mainframe-based, written in COBOL and PL/I.

"We are wrapping the legacy environment and migrating into the wrapper itself," Falten said. "You want to gradually depopulate the legacy application. You don't want to do that in a big bang because these applications are enormous. There is staged migration taking place, and that requires really good source-code control between the two environments."

On the mainframe, GM uses proprietary tools from IBM. For J2EE, it uses Merant's PVCS Dimensions. PVCS has been a standard for code control at GM for many years, according to Falten.

Maintaining version control has been a struggle. GM is working on a procedure in which each application can identify its own version number, and be aware of the version numbers of other applications on the network and the interoperability issues among them. "The actual applications need to communicate with each other, to verify that they can interoperate with each other," Falten said.

KEEPING FIT

Health club chain Life Time Fitness Inc. (www.lifetimefitness.com) also is taking the gradual approach to migrating legacy applications into the new environment.

The Eden Prairie, Minn.-based company's core line-of-business application is the Member Management System, written in J2EE on BEA's WebLogic application server, which tracks memberships and access privileges. The company is integrating with a 5-year-old legacy child-care system written in Microsoft Access, on one PC per health club. Also being integrated is a paperless contract system,

initially a stand-alone application when it was written five years ago, with rudimentary integration with the legacy member management system in use then, and the same child-care system in use today.

The new member management system was written with placeholders in the data structure for items not needed just yet—for instance, the contracts that will eventually be imported from the paperless contract system.

At the time the integration began, Life Time Fitness development was being done by a very small staff, with only a basic change-management system, consisting mainly of documentation for business requirements. That was not a problem then, but as the staff grew, the company required more developed tools.

Life Time Fitness now uses the open-source Concurrent Versions System (CVS) for source-code management, along with home-grown tools for tracking bug reports and feature requests.

"Typically, what we do is develop in the trunk until the point where we're ready for release or just have released, and the code is pretty solid at that point, and we are ready to do another big project. That's when we branch, and at that point the fixes we make are made to both the branch and the trunk," said Gary Lien, senior systems architect for Life Time Fitness.

ABRUPT REPLACEMENT

In some cases, enterprises will replace legacy applications all at once. That was the case at AdvancePCS (www.advancepcs.com), a prescription-drug benefits company formed by the acquisition of PCS Health by Advance Paradigm in 2000. The company decided to replace the existing Web-based client management systems at each of the companies that existed prior to the merger with a new system that would serve the entire enterprise, said John Jackola, the Irving, Texas-based company's change-management manager for Web applications.

The new application is written in Java running on WebLogic's app server. The two companies previously had been running a mix of WebLogic, BroadVision's portal and the iPlanet app server. "We did not have the resiliency we have now, the failovers; we have more redundancy now built into the system than we had in the past. It's better integrated, with better interfaces, and we have higher client satisfaction based on the new systems structures," Jackola said.

Initially, there was no change-management system. Jackola's first task, when hired, was to put one in place. Prior to his joining Advance Paradigm, the company was storing code on a workstation, with no disaster recovery, and no way to track or trace changes made back

by the IT department; medium-sized, departmental changes are approved by the CFO; and the largest changes need to be approved by the company executive committee, said Brent Zemple, vice president and CIO of Life Time Fitness.

AdvancePCS, a pharmacy benefits management company, maintains a steering committee to decide on and prioritize requested changes, with small processes given less scrutiny than large ones.

The company was formed by the merger between two competitors in 2000; the merger was handled by setting up teams from each side and having them teach each other about systems, and then collaborating to develop the new, replacement systems.

At benefits-management company Hewitt Associates LLC, coordination between the mainframe and application

server sides of the team is somewhat informal. The group consists of a single team, divided into development groups, and the staff frequently crosses over between groups, seeing to it that the application-server developers have extensive mainframe experience. "They know how the system works, how to fit the pieces together, and how to make things work both ways," said Bill Richards, change-management systems administrator for Hewitt.

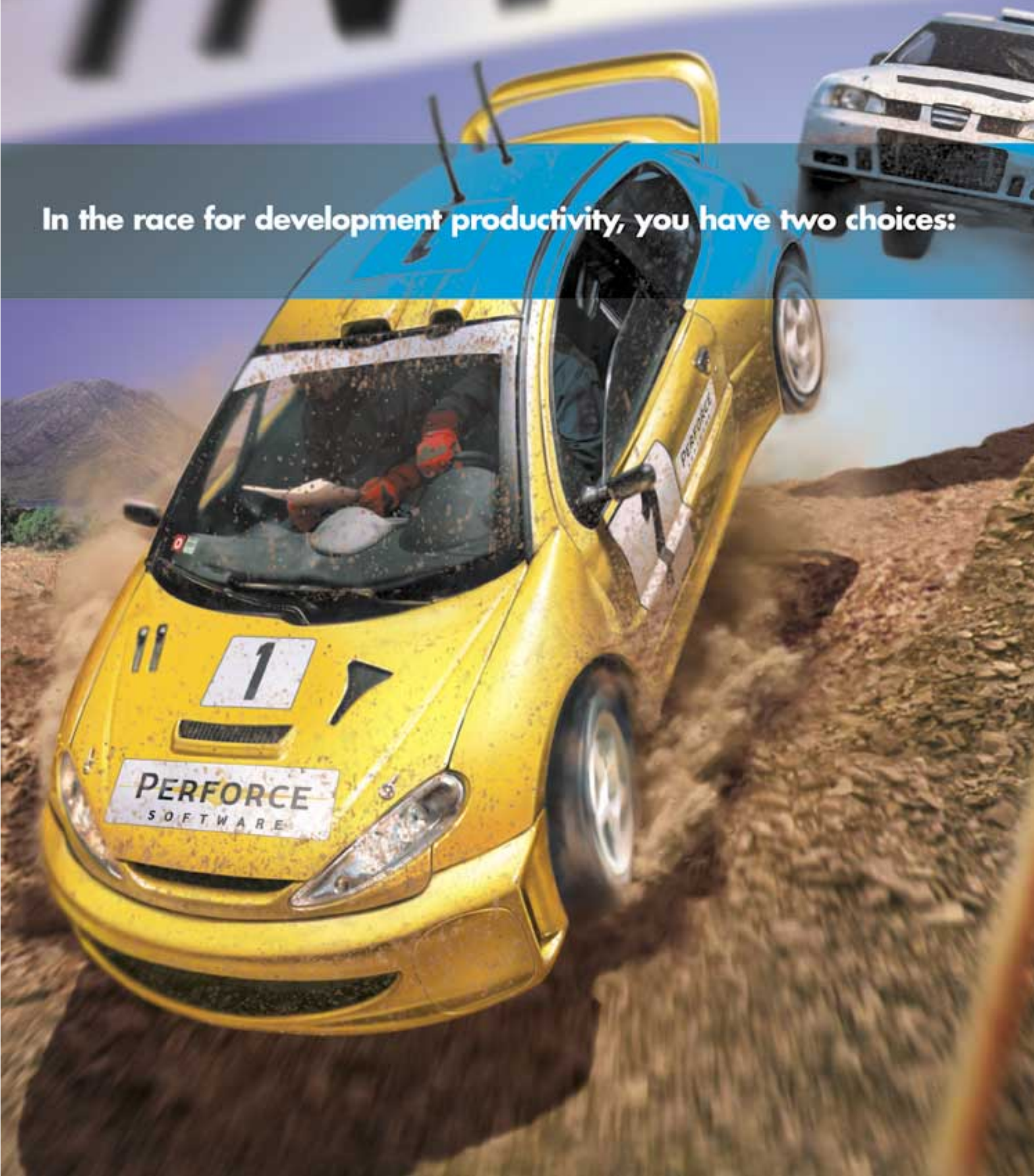
Likewise, at Verizon Communications, the staff meets to make decisions proactively, with an executive director coordinating peer groups. "We don't run up the ladder on everything. We get people talking to each other," said Jim Winder, change-control management/version-control administrator for Verizon.

—Mitch Wagner

► continued on page 18

WIN

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Developers Offer Change-Management Wish List

BY MITCH WAGNER

While enterprises described themselves as generally satisfied with their change-management tools, they also had long lists of requested functionality.

General Motors Corp. is

looking for integration between change-management repositories and configuration-management tools, and UDDI support to locate components for assembling applications, said Fred Falten, director of appli-

cation architecture and integration, application solutions delivery, for GM. He also would like to see integration among architectural, design monitoring, IDE and configuration-management tools.

Jim Winder, change-control management/version-control administrator for Verizon Communications, wants improved workflow tools to give each developer better visibility into the entire development process.

Integration between legacy and modern change-management tools is important for enterprises. "We've talked about these subjects for a couple of years now," said Bill Richards, change-management systems administrator for Hewitt Associates LLC, which manages benefits plans. The company would like to integrate its legacy mainframe source control application with its modern counterpart that runs Unix servers. Telelogic AB, which supplies its Unix change-management tool, is planning a mainframe version of its tool set, but that is years away from being stable enough to use, Richards said.

Richards would also like to see better integration between tools for managing application code and the Interwoven tools for managing end-user documents and Web site content. Interwoven uses a proprietary database, and the Telelogic software runs on an Informix database.

"If we could integrate the content with the source code, have everything included in one project, press one button and have everything integrated, that would be ideal. But we don't see a single tool that allows us to do that," Richards said. ■



Hewitt's Richards wants a single tool to manage code and content.

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CHALLENGE

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to where the business owner had requested changes. One of the first things that Jackola did at AdvancePCS was to migrate to a redundant system with RAID and a backup schedule.

The company settled on PVCs Dimensions. A key factor in selecting that software was a strong process engine to manage workflow.

The company decided to replace code rather than integrate existing code simply because it was faster. "We had to keep the clients satisfied, and maintain the system in parallel," Jackola said. "We pulled the functionality from both systems we wanted and rewrote and evaluated the code to make it more efficient. It would have taken more time to integrate than to replace." ■

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EDITORIAL

Eclipse Outshines Sun

IBM Corp. has been described many times in the recent past as a sleeping giant: Rouse it only at your peril.

Until a few decades ago, IBM dominated nearly every aspect of information technology. The antitrust investigations against the company's sales tactics, and the allegations of dirty tricks to harm the so-called "plug-compatible manufacturers" that sold add-ons for its mainframes, showed that IBM ruled the worlds of both hardware and software.

But then IBM went to sleep. In the mid-1980s and early 1990s, the company was adrift in troubled waters. It came late to the microcomputer revolution, and after its platform became successful, its proprietary PS/2 hardware and badly executed OS/2 operating system allowed "IBM PCs" to become "Windows PCs," ceding industry leadership to Microsoft.

It got worse. It was only a decade ago, after all, that chairman John Akers planned to break IBM into pieces, echoing the earlier dismantling of AT&T. IBM was dead, the pundits said—until new chairman Lou Gerstner pulled the company back together.

But even then, while IBM reaped profits on the back of strong server and services sales, nobody considered the company a development-platform powerhouse. The company's previous attempt to redefine the software development process—AD/Cycle, which advocated the use of CASE tools and a mainframe-centric methodology—was confusing and unsuccessful. The follow-on VisualAge product family never gained broad acceptance.

Yet over the past few years, IBM has woken up and has become very aggressive with its WebSphere product family. In particular, the company has found sure footing with Eclipse, the open-source project that serves as the foundation of its WebSphere Application Developer tool set. Initially viewed as a me-too imitation of Sun's NetBeans, Eclipse has overshadowed its older sibling.

While NetBeans has been increasingly marginalized as a Sun-only offering, the Eclipse consortium has gained broad support from an ever-expanding membership, including competitors Borland, HP and Sybase—and most recently, Oracle.

Even Object Management Group, the organization behind the Unified Modeling Language and Model Driven Architecture, has joined the Eclipse consortium, thereby giving it a strong endorsement as a leading broad-based tools platform and as a top competitor to Microsoft's Visual Studio .NET.

Indeed, the only major holdouts from Eclipse, at least within the Java community, are BEA and Sun. We wouldn't be surprised to see BEA join the consortium within the next year, and plug its WebLogic Workshop into the Eclipse framework. Sun—well, that's another matter.

It's in the best interest of the non-Microsoft community for Eclipse and NetBeans to merge, or at least cooperate. But don't count on it. IBM remains Sun's leading competitor. Sun, as owner of the Java Community Process, has accurately positioned NetBeans as the only 100% Pure Java tools platform, and as the foundation of its own Sun ONE tool stack. Even as the NetBeans project becomes more isolated in 2003, we don't expect Sun to change directions. ■

GUEST VIEW

REFACTORING: BOTH GOOD AND EVIL

Refactoring has a new buzzword status. Yet, as a practice, it has probably been around as long as software development itself. It is applied as a lone programmer cleans up hastily written code. It is applied as a team of engineers reworks an inherited heap of procedural spaghetti into a maintainable, object-oriented system. And it is applied by practitioners of some methodologies as a continual, mandatory activity.

Perhaps even more so than the application of design patterns (another hoary technique that has received a great deal of attention in recent years), refactoring is a fundamental aspect of real-world software development. So why has it risen to such prominence of late?

Certainly, it is linked to the general ascendancy of software engineering as a discipline. And, much like design patterns, refactoring has been explored formally and publicized through mass-market references during the past decade. As articles and books have been written on refactoring, developers have

delivered tools integrating effective refactoring support. Perhaps more than anything, refactoring has ridden the coat-tails of Extreme Programming and other agile methodologies that have attracted tremendous attention in recent years.

Development managers must be keenly aware of the costs and benefits associated with refactoring. Like most practices, it can be a critical element of a project's success or a key contributor to its failure, depending on how it is applied.

The goal of a refactoring operation is to change the internal structure of code to increase its maintainability, desirability or suitability for some new purpose, while preserving its existing, external behavior. For instance, an effort to take a legacy application to the Web might involve separating business logic from intertwined presentation code, thereby allowing the logic to be shared by both green-screen and Web

applications. Similarly, adding a second output option to a desktop application—perhaps emitting documents as XML in addition to sending them to a printer—might be best achieved by introducing a new output abstraction layer. Porting software from one language or platform to another is often an opportune time to factor out common operations from those that are specific to a particular environment.

How does one know whether the correct amount of refactoring, and the correct refactorings, are happening in a project? Different individuals will have very different ideas, but here are a few scenarios.

There are developers, usually those with high personal standards, who could be termed "aesthetic refactorers." Upon encountering code that is not ideal (in some respect), the aesthetic refactoring is greatly tempted to rework it into a more pleasing state. The reason given



STEVE POOLE

LETTERS TO THE EDITOR

WSIF GOES APACHE

In your article titled "IBM Extends WebSphere Beyond J2EE" [Dec. 15, 2002, page 1, or at www.sdtimes.com/news/068/story1.htm] you mention WSIF and point to www.alphaworks.ibm.com/tech/wsif for more information about it. Actually that site is now outdated; WSIF was donated to the Apache foundation some time ago and is now an open-source project hosted on Apache. You need to point your readers to <http://xml.apache.org/axis/wsif> for the latest on WSIF.

Nirmal Mukhi
IBM Corp.

MORE OPTIONS WITH JAVA

In the article "Benchmarks in the Middle," [Dec. 15, 2002, page 22, or at www.sdtimes.com/cols/javawatch_068.htm], Steven J. Vaughan-Nichols wrote that "the bottom-line economic truth is that there's no compelling financial reason to switch to .NET." And later the article states: "This is no time for any business to switch from a proven Java-based infrastructure to an unproven one."

I would agree that a business currently using Java would be making a mistake in switching to .NET; however, the big battle seems to be with companies who are primarily faced with integrating new ways of doing business (Web, e-commerce, etc.) with legacy (COBOL, mainframe) applications. These are the companies needing to make a choice between Java-based and .NET. I might add that the Pet Store benchmark had absolutely nothing to do with our company selecting Java-based over .NET. Our selection of Java-based over .NET was simply due to the fact that it provides us with more options (platforms, integration, IDEs, vendors, APIs, etc.).

David A. Buchwald
American Family
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BETTER TO STAY SMALL?

I found Mr. Rubinstein's column ["Good Governance," Dec. 15, 2002, page 26, or at www.sdtimes.com/cols/industrywatch_068.htm] to be interesting. I started a company in 1999 (Outlaw Technologies) and sold it to Quovadx in March 2002. We

were largely successful, since in the hardest market for software companies we were profitable, made money, people bought our software, etc. We went through all the exercises of raising money via VCs, and ultimately decided to only raise \$500K due to the market numbers you have to produce. Sometimes I wonder if an approach for some products is to remain small because the market for the \$5M-\$10M acquisition is probably larger than the \$100M acquisitions.

My perception of the venture market right now and technology companies is that everyone's looking for money, but people are going back into the garage. Before, you could raise money on an idea with some nifty resumes; now it doesn't get you very far. People are working on projects for free with the hope that there will be a payment (salary) once the thing gets its products selling.

Nowell Outlaw
VP Healthcare Development
Quovadx

WORK WITH ME, PEOPLE

In the Dec. 1 issue of SD Times, a Letter to the Editor from David Pazmino discussed

for doing so might be to make it more understandable or maintainable—certainly worthy goals. However, insertion of new defects is quite possible, and the opportunity cost of purely aesthetic refactoring may be great.

Between aestheticians and tinkerers, a body of code could be refactored indefinitely to the total exclusion of building the capabilities a project is intended to deliver! At WRQ, I have managed developers who take such pride in their creations that persuading them to leave code in a state of anything but perfection is a real battle.

Some development methodologies call for minimal initial design work, instead relying on refactoring and the principle of emergent design to support changing requirements. In the face of requirements turbulence, any attempt to predictively design in the right amount of flexibility is unlikely to produce optimal results. A just-in-time refactoring approach might end up providing better schedule granularity and less, or less risky, rework. In fact, when planning and building for the future are de-emphasized, the only sensible alternative may be heavy reliance on refactoring and its sup-

porting practices. Some WRQ products consist of millions of lines of code written over many years by large teams. Smaller teams today are able to deal with that complexity and respond quickly to customer requests using such techniques as pair programming and refactoring.

Other development methodologies call for the application of considerable research and design effort early in a project. The development manager's bias is toward precluding as much expensive rework as possible during the project and possibly through future projects as well.

Recognizing the fairly strong association these days between refactoring and certain methodologies very different from his/her own, the manager may even attempt to prohibit refactoring. Since a certain level of refactoring is a basic and pervasive aspect of programming, a policy of this nature is probably both technically naive and indicative of seriously risky micromanagement.

A better strategy would be to employ tools, such as code reviews and thorough unit tests, to ensure that external behavior is unchanged while developers rework internals as they see fit.

his frustrations with being a manager. He complained about his programming staff, the incessant meetings, human resource requirements and project planning.

But what was missing from David's letter was how he dealt with his staff.

He blamed everyone but himself for the problems with the application. In reality, it sounded like he was concerned with the appearance of doing of a good job. Nothing in his letter showed that he made the effort to work with his staff to deliver the product. His response showed he did not understand the need to lead people and properly delegate work to be a successful manager.

Andrew Corley

Abbott Systems Inc.

NO RESPECT FOR NOVELL

I was dismayed as I read your story on the Novell acquisition of SilverStream in the Nov. 1 issue ["Novell Offers Road Map...but to Where?" page 1, or at www.sdtimes.com/news/065/story3.htm]. I have been working with Novell products since NetWare 286 came out, Windows was hatched, and Linux was scare-

ware. I have yet to find a more stable, robust platform for the x86 architecture than NetWare.

When compared side-by-side (using the same hardware configuration), NetWare 6 running the Apache Web server outperforms anything Microsoft has, and is much easier to manage than Linux.

I wish the "trade magazines" would start looking at the truly technically superior products and rave about them as much as they rave about the "king of the hill."

I just went into business for myself, and what was the first thing I did? Got my Novell reseller authorization. As a computer professional I *must* sell the *best* products available. To do otherwise would degrade my own professionalism.

Hal Totten

President

SCI Networks Inc.

TECHIE OR MANAGER

I was reading through the "Letters to the Editor" and was prompted to read "Should Top Java Developers Code or Manage?" [Nov. 1, 2002, page 29, or at www.sdtimes.com/cols/javawatch_065.htm] online.

In some cases, a development manager or developer may actively oppose refactoring for fear of inadvertently changing a system's behavior. An obvious example would be when a widely deployed product exposes an API of some complexity. Customers, who rely on the API and perhaps on behavioral side effects or even bugs, become very unhappy when their extensive custom systems break because of a software "upgrade." Maintaining interface continuity is one thing; guaranteeing that deep, interdependent behaviors have not subtly shifted is quite another.

A conservative approach that trades efficiency or elegance for stability may be best in cases like this—even if the most expedient path to adding functionality or increasing maintainability calls for a sound refactoring.

TAKE ADVANTAGE OF LULLS

It is a rare developer (or a developer who hasn't learned anything) who is totally satisfied with the state of the code at the end of a project. It is a rare project manager who wishes to indulge a developer's desire to "clean things up," rather than get started on the

next project. However, if there is a lull between projects for developers, it may be a good time to consider whether a large-scale refactoring could significantly improve the next effort. Reworking a decayed class hierarchy, for instance, may enable a greater number of developers to work with greater efficiency.

Tools like IntelliJ's IDEA development environment and practices like source-code management and automated unit tests can help you apply refactoring effectively and confidently. Martin Fowler's book "Refactoring: Improving the Design of Existing Code" is an excellent reference. Keep in mind that increasing maintainability, efficiency and flexibility are great goals, but refactoring isn't free, it isn't always appropriate, and it doesn't guarantee success. Like fire, when carefully managed, refactoring is an indispensable tool. Left unattended, it may burn your project to the ground. ■

Steve Poole has been a developer and development manager at WRQ Inc. since 1991, and is group manager of the WRQ Reflection for the Web development team.

XML DBs NEED INTEGRATION

The article "Ipedo's XML Tools Get Virtual" [Oct. 15, 2002, page 6, or at www.sdtimes.com/news/064/story10.htm], states: "What differentiates Ipedo's suite from its competition in the XML management market, namely Software AG and NeoCore Inc., is that most of them have only an XML database, and lack integration tools."

Software AG's Tamino XML Server has been offering integration from day one with relational databases (a feature called Tamino X-Node) and with enterprise applications of all sorts through its Tamino Server Extensions. Without integration into back-end server systems up to mainframes, an XML database would be very limited in its usefulness.

Rainer Glaap

Director, Product Marketing
Software AG, Germany

CORRECTION

Michel Brassard is chief technology officer at Codagen Technologies Corp. Pricing for the Codagen Architect 3.0 bundle begins at US\$49,500. The information was incorrect in a story in the Dec. 15 issue.

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CUSTOMER EXPERIENCE, MICROSOFT STYLE

Maybe it's me. Maybe I'm just not clear enough. But I shake my head in consternation because it's not as though I don't try. I'm here every couple of weeks tossing my verbal pebbles at Redmond; repeating—nay, almost chanting—an ongoing mantra against the long-term dangers of poor software quality and excessive licensing greed at the expense of customer loyalty. And what does Redmond do? Listen, fix, assuage? Nope. Microsoft just pushes that much harder.

Take last week, for instance. Here are our boys in Redmond spewing forth press releases on how the company is sorry for its “poorly handled” licensing changes and its apparent lack of concern for its small and medium-sized business customers, and promising to “analyze the situation” to find a more acceptable path. So what's the first result of this analysis? Why, another sudden and potentially costly licensing change, of course.

This time, Microsoft has changed the licensing scheme for the Windows .NET Server 2003 product family due for release in April. Now, users will be required to purchase a Terminal Server Client Access License (TS CAL) for any client accessing the server, regardless of which Windows version they're using. It's as though someone suddenly woke up and realized what a systems administration boon TS can be and got peeved that Redmond hadn't charged more for it.

Previously, folks deploying Windows 2000 servers and Windows 2000/XP clients could access full Terminal Server functionality for no extra cost simply by downloading some client software for the individual users. But heck, that's giving away useful functionality without grasping for every possible penny and pushing customers toward yet another operating-system upgrade regardless of whether or not they really need it. Can't have that.

One way around this latest mugging—er, licensing change—is (surprise) to move your clients to Windows XP Professional today. This way, Windows .NET Server 2003 will come with a free TS CAL server license. Alternatively, if you purchased your desktop license under Plan 6, you'll also get a free TS CAL server license. If you don't upgrade, you pay—though Redmond hasn't decided exactly how much. But we're not trying to sway anyone unduly. No, sir.

And that's just licensing. You'd think they might leave it at that and call it a Merry Christmas. Alas, there are more goodies in store for Windows .NET Server 2003 fans—and not just users this time, but ISVs as well. If you're an ISV that has recently developed an application with Windows .NET Server 2003 in mind, you might have been looking forward to a peaceful holiday. After all, for

an April release date, any sane developer would have locked down the code by now and be in final beta testing and internal QA. Right?

Well, it's back to the lab again, because Redmond has decided to change the feature set on Windows .NET Server 2003 “to improve security.” According to recent statements from Microsoft's server group manager, Bob O'Brien, the company has “removed or updated” a number of critical components and drivers within the upcoming

operating system. This even includes the removal of certain features the company deemed unnecessary in a server-oriented product—like Universal Plug and Play. Sure, because when I'm upgrading server hardware, I want that to take as long as possible. And if your application happened to rely on IIS 6.0 being installed by default, you've got problems as well.

The really bittersweet part is that now Microsoft is “strongly” urging ISVs to “thoroughly test” their applications to ensure complete compatibility by the time Windows .NET Server 2003 sees the light of day in April, and to minimize as much as possible “negative user compatibility experiences.” How nice.

It's a like a speech from an Axis of Evil diplomat. Shouldn't that be changed to “thoroughly retest” with a big, fat raspberry being blown at every customer? Even with the Windows Application and Customer Experience

Web site (www.microsoft.com/windowsxp/appexperience/default.asp) available to ISVs, how is this anything but a knife in their backs? I don't know about you, but if I'm aiming to release anything this coming April, I'm in the late stages of final approval by December, and gearing up for a little something called manufacturing and distribution. Changing the underlying platform on me at this point—especially when it comes to removing large chunks of operating-system functionality—is like ordering nuclear weapon parts and then preaching against weapons of mass destruction. The move lacks sincerity.

Microsoft has been speaking out lately against accusations that its newfound love for operating-system security is really just a late knee-jerk reaction to loads of bad press and customer complaints. But with events like these, how are we to interpret them as anything else? If Microsoft were really interested in making end-user experiences less negative, it might think about feature changes during the proper development phase, and instead of new licensing prods, it might consider taking it easy on its customers' budgets during this economy in the interests of customer loyalty further down the road.

But who needs that when you're practically the only game in town? ■

Oliver Rist is a freelance technology journalist and president of FB2 Corp., a New York-based software manufacturer.

WINDOWS & .NET WATCH



OLIVER RIST

THE LEGAL THING VS. THE RIGHT THING

I got a call recently from, well, let's not call him a friend but someone I've known for a very long time. He's an unpleasant programming mercenary from Austin, and we'll call him “Fred.” You know the sort, he doesn't think he's God's gift to programming, he *knows* he is, and would argue with James Gosling about how to program “Hello, World” in Java.

Somehow or other, Fred managed to head his own small company creating custom software. Don't ask me how; he was never that good a programmer. And, as for his people skills, I've known more presentable skunks.

Nevertheless, it was as a manager that Fred found out that his company's contract wasn't going to be renewed by a customer. Unfortunately, like far too many programmers, he assumed that his skills at reading source code were good not only for Java but for legalese as well. Thus, when he found that the contract said the documentation belongs to his company and not to the customer, he immediately destroyed all the documentation in the customer's office. All of it: the source code, paper copies lying around the office, the copies hiding out in the server, the in-house developers'

workstations—every bit, every byte, every word. He looked upon what he had done and yea, verily, he said it was good.

The weekend goes by and come Monday, the customer's IT staff starts looking for the documentation. A few days later, it begins to dawn on them that there is no documentation left. They finally ask Fred for it, and that's when he tells them that since the contract wasn't renewed, he had destroyed it all. Of course, if they wanted it back, they could have *his* copies, for a sizable fee. Or sign a new contract.

As you would expect, things went ballistic. So, Fred called yours truly to whine about how unfair it all was and how he was perfectly within his legal rights—whine, moan, bitch, complain.

I told him what I'm going to tell you. First, it had been a sloppy contract to begin with. When a customer pays you to write some custom software, he almost always wants the whole shebang: documentation, source code and binaries. I don't care who you are or who your customer is, when you're dealing with development, make sure everyone understands exactly who gets the intellectual property rights to everything.

And if everyone agrees that the documentation and source code belong to the developer, and not to the customer, start putting the copyright mark and your company name on it, so no one can claim that they “forgot.” CIOs come and go, and by the time your contract ends, no one may have looked at the code in years.

Sound like too much trouble? Don't like lawyers? Well, I'm not crazy about legal red tape either, but Fred is well on the way to bankruptcy now because of legal fees. If he had made sure everyone was on the same page in the first place, he wouldn't be in this mess.

“Next,” I told him, “you should have explained to the CIO that the documentation was yours and that if they insisted on using it, you wanted some kind of compensation for it. The CIO wouldn't have liked it, but since they're unlikely to want to pay for a lawyer's Paris vacation either, you probably could have worked out something before you cranked up the shredder.”

“But I was right!” Fred screamed. “It's in the contract!”

“So what?” I replied. “Even though you did the legal thing, you didn't do the right thing.”

If his finances survive, I'm sure Fred

will eventually win—after all, it is in the contract. But at what cost? His nerves are eating him up alive and—this is the important thing—win, lose or draw in court, he's going to lose business.

Why? Because even if the courts hadn't gotten involved, his former customer is going to blacken his reputation every chance he gets. They will tell the story for years of the jerk programmer who tore up their documentation and erased the source code, and then tried to blackmail them to get it back.

At this point, he began screaming and swearing about how it would be illegal for them to blackball him like that.

Maybe it is, maybe it isn't—it depends on how it's done. If your former customer creates an organization to make sure you never work again, you'll win in court. If one CIO casually mentions to another CIO that you didn't work out well for them, you won't win.

No matter how hard it is, no matter how impossible the client, you should always try to work something out. If you burn your bridges, the way Fred has, you may just find that the only one really burning is you. ■

Steven J. Vaughan-Nichols is editor of Practical Technology (www.practical-tech.com) and has worked as a programmer for NASA and the Dept. of Defense.

JAVA WATCH

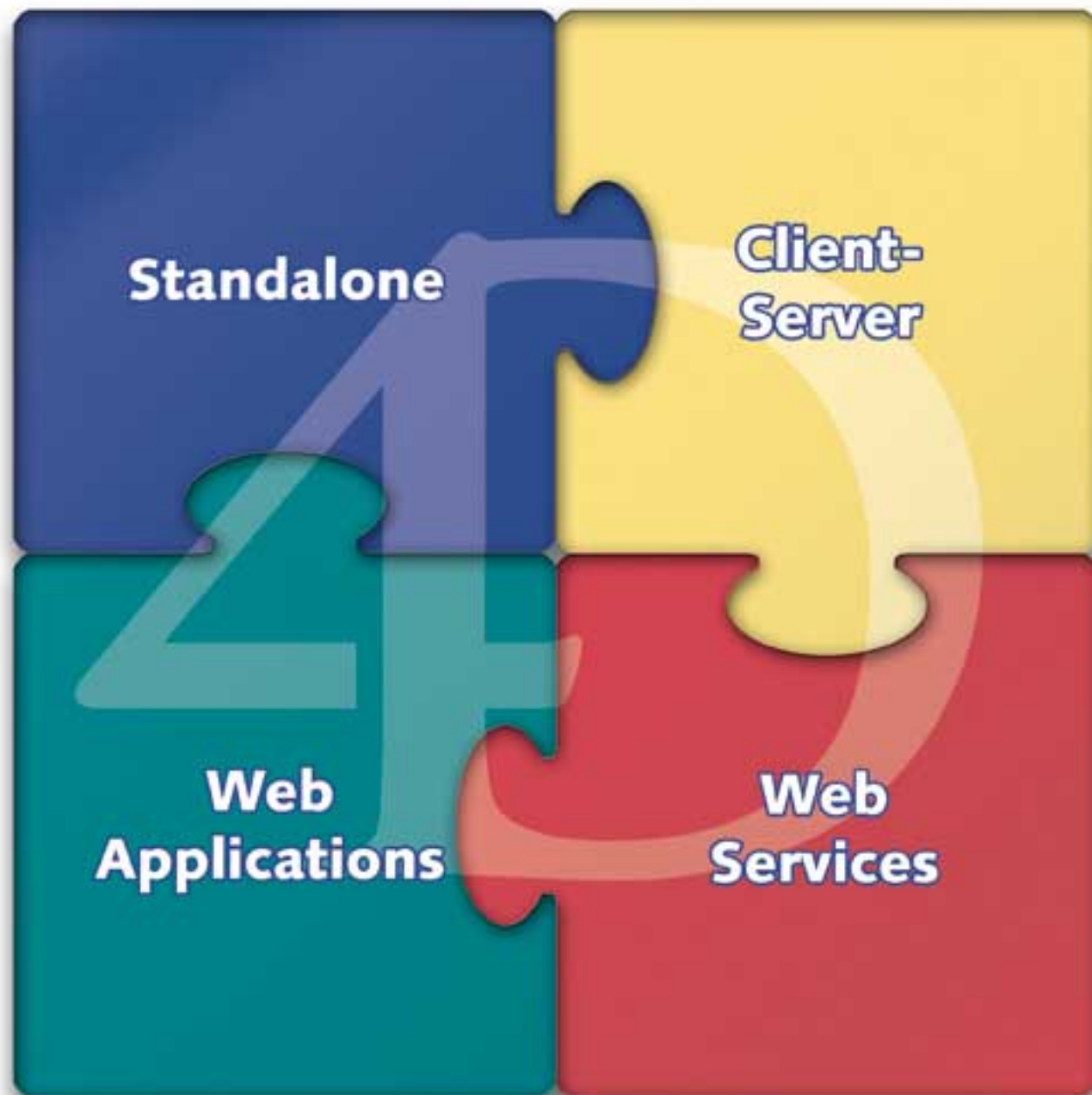


STEVEN J. VAUGHAN-NICHOLS



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CAN BEA HOPE FOR SAFETY IN DEV TOOLS?

A pulse of uncertainty can be seen coursing its way through the Java app-server market. This collective shudder derives from the seemingly inexorable march of application servers towards commoditization. As the feature sets and performance of these products converge, the need to pay a premium for any single server will disappear.

For IBM and Oracle, which enjoy the second- and third-largest market shares respectively, trailing behind BEA, this development is not disastrous. Both companies have other product lines from which they derive their principal income. The app-server revenue stream is simply incremental. They could surely get along fine without it.

In the BEA + IBM + Oracle troika, the company least at risk by app-server commoditization is IBM, and yet it has been more active than its competitors in forfending this eventuality. It purchased Rational (that is, presuming the US\$2.1 billion deal closes) and made clear that even though the Rational name will be retained, the newly acquired tools would be dovetailed around the WebSphere app server and product family. (It's similar to IBM's

continued use of "Lotus" in its Notes product line.)

The choice of investing in software development tools is by no means a casual one. App servers are products that just beg for extensions. They are, after all, execution platforms with wired-in messaging. However, historically, the extensions that vendors have provided these platforms have not caused much excitement in the development community. All portal software, enterprise-computing extensions, voice technology and other add-ons have never managed to reach critical mass, or anything close.

Oracle and BEA, however, do appear to agree on the choice of developer tools to broaden their franchises. Oracle's forays are centered primarily around JDeveloper and some product-line fragments it acquired from WebGain. But until Oracle drops JDeveloper's mandate of pushing the company's other products, namely its database, JDeveloper will not step out as a pure dev tool and garner broad appeal. It will remain a good product for Oracle shops. This is probably good enough for Oracle.

BEA, however, does not have the

luxury of such a move, because it doesn't have any coattails to hang onto. To its credit, BEA was one of the first companies to see the advantage of dev tools to broaden its product line. Even in the halcyon days of WebLogic's meteoric rise, BEA was investing in developer tools via the joint venture, WebGain, where it installed Joe Menard, one of its senior executives, as CEO. The subsequent and unfortunate demise of WebGain has been well documented.

An important casualty of this flameout was BEA's product-line aspirations. BEA bounced back with WebLogic Workshop, a Web services product that launched this summer. While the product had much to recommend it, it has not known real success. This is due, I believe, to a branding error: The WebLogic name made the product appear to be BEA-centric. It also hides the fact that Workshop is a Web services tool, not an adjunct to the app server. The product's naming makes this impossible to figure out.

In its current position, if BEA wants to continue with development tools, it has to consider how to deliver profitably a line of top-quality developer products that lack the tight ties and naming associations to WebLogic. On

the surface, this would suggest acquiring Borland.

However, rumor has it that BEA is actually going back to the drawing board to devote more time to its app server, as I recommended in my previous column. It is spending its time on greater application integration, portal software and tighter binding to the company's Liquid Data data-integration utility. This effort, code-named Gibraltar, will in theory trickle down to new features in WebLogic Workshop. When Workshop gains these capabilities, it should be an even more powerful environment. But it's unclear whether it will be a more successful one.

BEA's moves to improve its app server are good ones and the approach the company should be adopting. BEA is probably best served by breaking the perception of Java app-server commoditization by shipping an utterly compelling platform. If it wants to really use development tools to break out of its bind, however, it needs to do something bold or else think through a large sweeping tools strategy, articulate it well and clearly, and begin executing on it. Without this, IBM's Rational acquisition will become more of a threat. ■

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

MIDDLEWARE WATCH



ANDREW BINSTOCK

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FROM THE 'IN' BOX

A few last-minute, end-of-the-year items that could not pass without mention:

SOFTWARE PROJECT SUCCESS RATE CLIMBS

The Standish Group, which monitors application development success and failure rates, now says that 34 percent of all projects are successful, a big increase from the 16 percent success rate found in 1994. Success, as defined by Standish, means a project was completed on time and within the budget allotted for it, and meets the project's requirements. Standish looked at 13,522 projects and determined that the failure rate has dropped to 15 percent of all projects, less than half of the 31 percent project failure rate in 1994. That leaves 51 percent of all projects as being what Standish calls "challenged," which means they have higher costs or took more time than anticipated but ultimately were completed.

When studying those challenged projects, Standish (www.standishgroup.com) found that cost overruns were lower than they were for challenged projects in 2000, but also noted that about half of the projects in the 2002 report were budgeted at or below US\$750,000. The number of new projects started also was lower; Standish reported 240,000 new projects in 2002 as compared with 300,000 new starts in 2000. But while cost overruns were reduced, time overruns increased to 82 percent of the projects reported, a large increase from 63 percent in the 2000 report.

What this would seem to confirm is that few companies are starting huge

new development projects, and that the ones that are being started are often being done so with fewer monetary and personnel resources. Hence, we see cost overruns declining, yet time overruns spiking dramatically upward. In a weak economy, companies talk about doing more with less, and the Standish research bears that out. For the long term, though, this can lead only to developer burnout, lower-quality software and increased costs to revise and correct applications.

INDUSTRY WATCH



DAVID RUBINSTEIN

VC MONEY FLOWS INTO ENTERPRISE SOFTWARE

While the amount of venture capital financing start-ups dropped substantially in 2002 as compared with the three prior years, still, about US\$2.4 billion was invested in 322 enterprise software companies, according to tracking and analysis firm VentureWire (www.venturewire.com). More good news is that this sector received more capital than any other business sector; biotechnology was second this year.

In 2001, 469 enterprises received \$4.1 billion in funding in the software sector. For all sectors through Dec. 15, \$20.1 billion was invested in 2,070 deals, compared with \$37.8 billion invested in 3,200 deals in 2001.

What this indicates is that innovation still is happening at the start-up level, where passionate visionaries continue to develop new methods and tools for making businesses more efficient. Companies, after all, always will pay for software that can save them money. But while it takes more than a flip-chart presentation and a five-year plan to get funded these days, the amount of invest-

ment shows that VCs still have a lot of money on hand, and that their hangover from the dot-com binge is dissipating.

PERL TURNS 15

The text-processing language, conceived of by Larry Wall and released as version 1 in 1987, has grown into a community of between 1 million and 2 million programmers. Here, from <http://history.perl.org>, is a look at the origins of the language:

"Practical Extraction and Report Language: Perl is a interpreted language optimized for scanning arbitrary text files, extracting information from those text files, and printing reports based on that information. It's also a good language for many system management tasks. The language is intended to be practical (easy to use, efficient, complete) rather than beautiful (tiny, elegant, minimal). It combines (in the author's opinion, anyway) some of the best features of C, sed, awk, and sh, so people familiar with those languages should have little difficulty with it. (Language historians will also note some vestiges of csh, Pascal, and even BASIC[PLUS].) Expression syntax corresponds quite closely to C expression syntax. If you have a problem that would ordinarily use sed or awk or sh, but it exceeds their capabilities or must run a little faster, and you don't want to write the silly thing in C, then perl may be for you. There are also translators to turn your sed and awk scripts into perl scripts. OK, enough hype."

Perl grew quickly, with version 5 being released in 1993 into a vibrant community of developers who continue to create extensions and keep the language alive through the comprehensive Perl archive network.

David Rubinstein is executive editor of SD Times.

DATA WATCH

When it comes to IT management, IBM Global Services captured the top position in every region with the exception of one—North America—where Electronic Data Systems Corp. has a slim lead with a 14 percent market share, a full point higher than IBM's share. Yet the roles are reversed worldwide, where IBM beats EDS handily, 14 percent to just under 11 percent, according to final 2001 figures tabulated by Gartner Inc. and released in December 2002. The other major players are Computer Sciences Corp., AT&T Corp., Fiserv Inc., Fujitsu Ltd. and Siemens AG.

The collapse of the telecommunications market, divestitures and post-Y2K woes brought about many of the most dramatic losses, while mergers and acquisitions yielded some of the greatest growth rates.

Recent mergers and acquisitions activity can be expected to have a substantial impact on future market-share reports. For example, when the 2001 IT management revenue of Hewlett-Packard Co. and Compaq Computer Corp. are added together, the new post-Compaq-merger HP leaps from No. 26 to No. 7 in terms of worldwide IT management market share, and from No. 23 to No. 9 in North America.

Source: "IBM Tops in IT Management Market Share," December 2002, Gartner Inc. www.gartner.com



BUSINESS BRIEFS

Oracle Corp. last month reported second-quarter 2003 revenues of US\$2.31 billion, down slightly from the \$2.38 billion generated in the same quarter a year ago. Net income of \$535 million, or 10 cents per share, compares with prior-year income of \$549 million and also 10 cents per share. Oracle saw growth in license updates and product support revenues, while its license revenues and service revenues both slipped from 2002 figures . . . **TIBCO Software Inc.** reported fiscal-year 2002 revenues of US\$273.4 million and pro forma earnings of \$14.1 million. Fourth-quarter revenues were \$71.3 million, up from \$63.3 million in the third quarter. Net GAAP income for the quarter was \$3.4 million, or 2 cents per share . . . **Progress Software Corp.** announced it has completed its acquisition of **Excelon Corp.** for US\$3.19 per share, as Excelon's shareholders voted to approve the acquisition . . . **Curly Corp.**, an early player in the rich-client Web application development and delivery space, has secured US\$17.9 million in venture funding, spearheaded by **Baker Capital** and **Equity Group Holdings**. Curly has raised more than \$60 million over the past four years, and will use this money to fund sales and marketing efforts, according to the company . . . **Red Hat Inc.** reported third-quarter fiscal 2003 revenues of US\$24.3 million, compared with \$21.2 million in the second quarter. The company reported a net GAAP income of \$305,000, as compared with a net loss of \$2 million in the prior quarter and a net loss of \$15.1 million a year earlier . . . **Palm Inc.**, consisting of Palm Solutions Group and PalmSource, reported second-quarter fiscal 2003 revenues of US\$265 million, down from \$291 million reported a year earlier. Net GAAP income for the quarter was \$3.5 million, or 12 cents per share, compared with net losses in the first and second quarters. ■

CALENDAR OF EVENTS

- Oracle AppsWorld** Jan. 19-22
San Diego
ORACLE CORP.
www.oracle.com/appsworld/sandiego
- LinuxWorld Conference & Expo** Jan. 21-24
New York
IDG WORLD EXPO
www.linuxworldexpo.com
- Integrate 2003** Jan. 28-29
Burlingame, Calif.
OBJECT MANAGEMENT GROUP
www.integrate2003.com
- Wall Street On Java Technology** Feb. 4-5
New York
LIGHTHOUSE PARTNERS INC. & FLAGG MANAGEMENT INC.
www.javaonwallstreet.com
- VSLive** Feb. 9-14
San Francisco
FAWCETTE TECHNICAL PUBLICATIONS
www.vslive.com/2003/sf

For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar.

Information is subject to change. Send news about upcoming events to events@bzmedia.com.

their installer tool



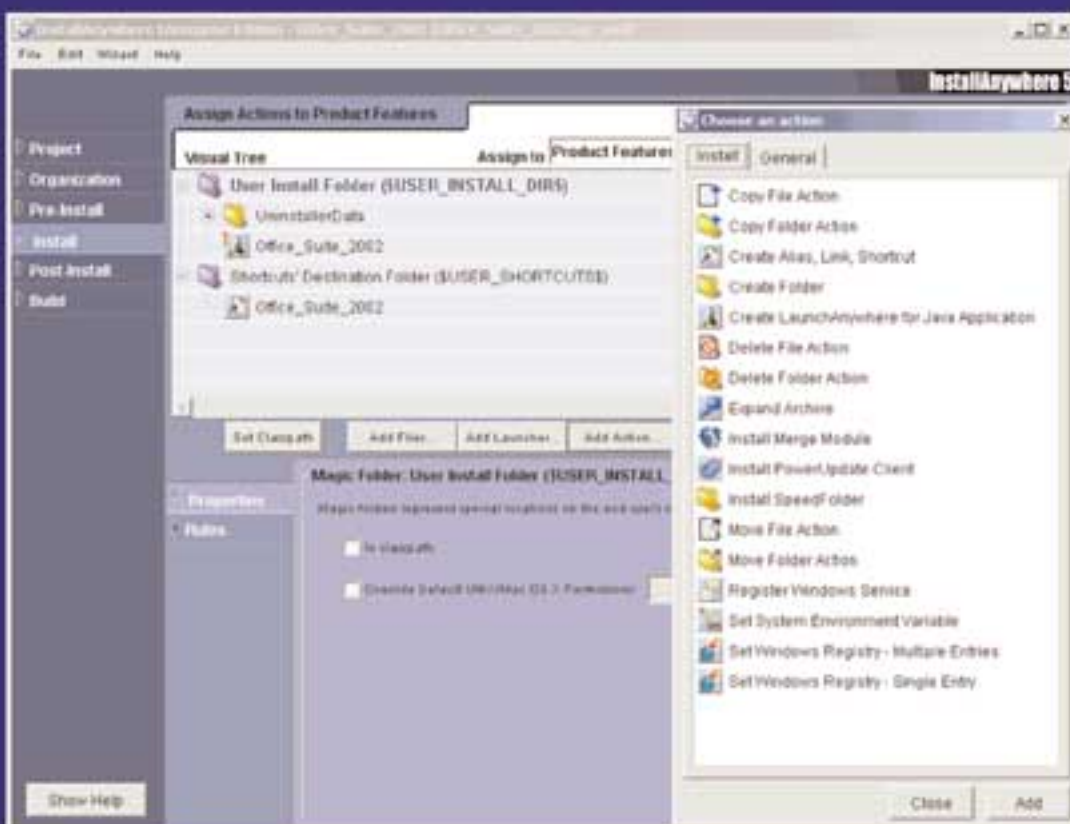
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Meetings
Changes
Chaos
Changes

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